

WarBirds III Draft Manual

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Entertainment
Network

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Questions or Problems

If you have difficulties with this game and cannot find the solution in this manual, you can also obtain customer service online. We can be reached as follows:

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Download & Installation

PC System Requirements

- Pentium II, 400 MHz, 600 MHz recommended.
- 128 MB RAM, 384 recommended for best play.
- DirectX 8.0 compatible, or DirectX 8.1 compatible (recommended for best play) sound and video cards with Windows 98SE, ME, 2000, XP drivers, as applicable to your operating system.
- Joystick, mouse and keyboard. A throttle and rudder pedals are recommended. Several manufacturers make models of their flight control systems for the PC.
- 14.4K or faster connection to the Internet. To connect via PPP/SLIP/LAN, you must have Windows Dial-up Networking and TCP/IP drivers installed (included with Windows).
- 16 MB 3D card.
- Recommended 3D cards:
 - ATI Rage 128
 - ATI Rage Mobility128
 - ATI Radeon
 - Matrox G400
 - NVidia GeForce 256
 - NVidia GeForce 2MX
 - NVidia GeForce 2
 - NVidia GeForce 2 Ultra
 - NVidia GeForce 3
 - NVidia GeForce 4
 - NVidia Quadro
 - NVidia Quadro 2 Pr0
 - Power VR Kryo II

Macintosh System Requirements

- PowerPC-based Macintosh or compatible computer, 400 MHz or faster.
- MacOS version 8.6 or higher.
- 256 MB RAM required (needs at least 300 MB virtual memory under 9.x).
- OpenGL version 1.2.1 (included in the download).
- A 14.4 K or faster connection to the Internet for online play.
- Joystick, mouse and keyboard. Throttle and Rudder pedals are recommended. Several manufacturers make models of their flight control systems for the Macintosh.
- 3D accelerator card with Direct Support for Apple's OpenGL.
- Supported 3D Cards
 - ATI Rage 128 VR
 - ATI Nexus
 - ATI Radeon
 - Nvidia GeForce 2MX
 - Nvidia GeForce 3
- Mac compatible joysticks tested and supported:
 - Saitek Cyborg 3D
 - Saitek Cyborg Gold
 - Saitek X series (only supported under OS 9.x)
 - MacAlly I-Stick
 - Gravis Dual control Xtreme
 - CH Pro F16 Fighterstick, Pro Throttle, and Pro Pedals ADB (no support for ISP callibrator)
 - CH F-16 Combat Stick, CH ProThrottle, CH ProPedals USB
 - Thrustmaster FCS Mk I, Thrustmaster WCS, Thrustmaster RCS ADB

Downloading & Installing

Before installing *WarBirds III*, close all other applications that are running. After installation is complete, restart the computer so that all the new settings can take effect.

If you have trouble downloading, there is a CD with all the *WarBirds III* files for only \$9.95 (at time of writing), which can be ordered from the Downloads page at <http://www.ient.com/warbirds/downloads.html>.

1. Download *WarBirds III* from one of the following sites:
 - *WarBirds III* Web site at <http://www.ient.com/warbirds/>
 - FurBall at <http://www.furball.warbirdsiii.com/>
2. **PC Only:** Using Windows Explorer locate the downloaded application, and double-click on it. Follow the instructions on the screen.
3. **Mac Only:** Using Stuffit Expander, uncompress the downloaded file. It unstuffs into a folder called WarBirds III. Double-click on the *WarBirds III* Installer file inside this folder. There is also an OpenGL 1.2.1 installer folder. Double-click on the OpenGL 1.2.1 file in this folder.
4. Launch *WarBirds III* by double-clicking on the *WarBirds III* application, which is located in the WarBirds III folder.

DirectX 8.1

Many games and other Windows programs use DirectX, a standardized set of tools which allow programs to communicate with and control your system's hardware. DirectX-based programs use DirectX 'drivers' to perform many functions, such as painting graphics to the screen or having your sound card play sound effects.

With new technology constantly being introduced (such as next generation 3D Accelerators), DirectX is updated to support these new technologies, and the hardware manufacturers release new 'drivers' for use with the most recent version of DirectX.

We advise that players download and install DirectX 8.1 from MicroSoft at <http://www.microsoft.com/directx/homeuser/downloads/>

Latest Drivers

We recommend that you download and install the latest drivers for your hardware. This includes your Joystick, Sound card and Video card.

Updated drivers can be obtained from each manufacturer's Web site.

Recommended Video Card Manufacturers

Connect to the Internet, then click on a link below to go to that manufacturer's Web site.

- [NVidia—http://www.nvidia.com/](http://www.nvidia.com/)
- [Matrox—http://www.matrox.com/](http://www.matrox.com/)
- [ATI—http://www.ati.com/](http://www.ati.com/)

Preflight Selections

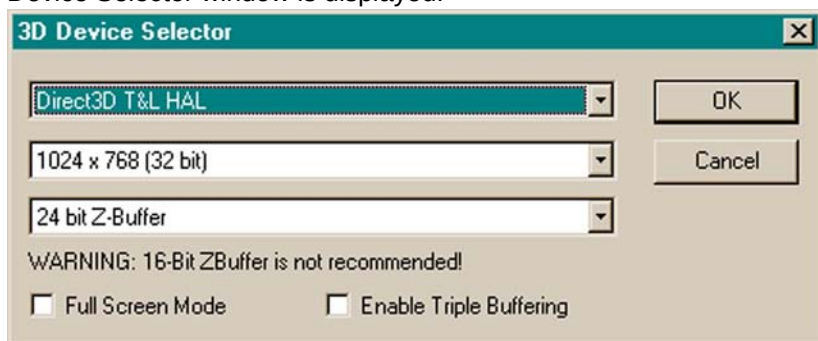
Close all other applications, toolbars, animated cursors and system tray applets when playing *WarBirds III*. See [“Other Programs Running in the Background” on page 135](#).

PC Users: Launch *WarBirds III* from the Windows desktop. Select *Start*, then *Programs*, then *iEntertainment Network*, then *WarBirds III*, and then *WarBirds III*.

Mac Users: Launch *WarBirds III* for the Macintosh by double-clicking on the *WarBirds III* application.

3D Device Selection

Before launching *WarBirds III* set your Windows Display Settings to High Color (16 bit) or higher. When *WarBirds III* is launched, the 3D Device Selector window is displayed.



3D Device Selector Window

1. Select an option from the drop-down menu. If you see T&L HAL use it. It means transform and lighting (T&L) calculations are done by the 3D hardware. This is a *good thing* since it frees up CPU cycles.
2. Select a resolution, this must be the same or less than your Windows setting. 32 is recommended, 16 may cause polygon flashing or tearing.
3. Select one of the Z-Buffer options. Set this to the highest you can, but be aware that some hardware (Nvidia) needs to have this match the bit depth you select for resolution.
4. Select Full screen mode to have the *WarBirds III* window take up the whole of the screen.
5. Click the box to enable triple buffering, if required. Triple Buffering improves the smoothness of the graphics, but it can be system intensive. You may find your framerate drops when it is selected.
6. Click *Okay*.

Exit the rolling credits screen by pressing **Esc** or clicking. The Plane Selection screen is displayed with the Main menu on the left.

Setting Up your Game Controllers

WarBirds III automatically configures your Game Controllers, so most players do not need to do anything.

Mac Users using a USB Joystick: Download and install the Mac Joystick Calibrator.

1. Download the file iSP_Calibrator.sit (1.6KB, 6/22/01) from http://files.warbirdsiii.com/WarBirds/WBIII/ISP_Calibrator.sit.
2. Double-click to unstuff the downloaded file.
3. Double-click on the unstuffed file, ISp Calibrator.
4. Click on the *Calibrate* button.
5. Follow the instructions on the screen.

The purpose of this utility is to solve Macintosh joystick calibration issues such as getting only 50% throttle input or pitch input. If you see the calibration button grayed out, this means that your joystick does not support calibration via the ISP calibrator. To calibrate your stick you need to use your joystick manufacture's software. This utility is NOT meant for use as an input mapper (programming certain buttons to perform specific functions). To program specific buttons use the

Input Mapper within the *WarBirds III* setup dialog. This explains why the button graphics within the calibrator screen display a red crossed circle. *WarBirds III* does not use Input Sprockets to map functions to keys.

Changing the Game Controllers and Actions

To customize your Game Controllers, select *Setup* from the Main menu. The Setup screens are displayed, with the default Stick menu at the front. *WarBirds III* allows you to use multiple joysticks, rudder pedals and a throttle control, with each action on a given controller controlling a particular movement of the aircraft. (See also [“Customizing the Input Mapper” on page 24](#)).



Stick Setup Screen

Selecting a Controller

1. Select a joystick from the drop-down menu alongside *Roll* in the top part of the Stick screen. That joystick will control the Roll function of the aircraft.
2. Then select the *Axis* that you want to control the Roll. The default is the X-axis.
3. Repeat steps 1 and 2 with the *Pitch*, *Yaw* and *Throttle* controllers, until each function is controlled by the controller in the way that you prefer.

Centering the Joystick, Rudder and Throttle

1. The box in the bottom lefthand corner represents the limits of the joystick's movements along the vertical and horizontal axes, with the cross showing the position of the joystick. Move the stick to the limit of its movement in all directions a couple of times, then click *Center Joystick*. Repeat if necessary.
2. The red line at the top of the box shows the position of the rudder. If you have a "twisty" joystick, twist the joystick to its full extent in each direction a couple of times, then click *Center Joystick*.
3. The bar on the right of the box represents the throttle position (assuming you have one). Move the throttle control to maximum and minimum a couple of times, and then select *Center Joystick*. If you have rudder pedals, move them as far as possible in each direction, and then click *Center Joystick*.

NOTE: Whenever you fly in *WarBirds III*, release all controls and then press **F12** to center the joystick and ensure precise control.

Calibrating your Game Controllers

1. Select the action you want to calibrate, *Roll*, *Pitch*, *Yaw*, *Throttle* or *Brakes*.
2. Select *Center Joystick* to center the joystick that controls the action you have selected.
3. Adjust the slider controls, deadband and damper until the cross in the calibration square moves with the controller as you want it to.
4. Select *OK* to return to the Plane selection screen.

Flight & Offline Setup

To adjust the Flight and Offline Mission options, select *Setup* from the Main menu, and then the *Flight* tab. Also see [“Offline Missions” on page 33](#).



Flight Setup Screen

- Click to enable or disable the General Settings. When the button is lit that setting is enabled.
 - Show Pitch Ladder*—Select to have the pitch ladder displayed in the cockpit.
 - Show HUD*—Select to have the HUD (red text) displayed when flying.
 - Show Stickset Messages*—Select to be notified that you have swapped stick sets. (see [“Customizing the Input Mapper” on page 24](#) for information regarding Sticksets).
 - Show Radio Bar Buttons*—When checked, the Radio bar buttons are displayed (see [“Using the Radio” on page 45](#)).
 - Show Help Bar*—When checked the help buttons are displayed.

2. Set the percentage of brake power that is used when the brakes are initially engaged and whether to have the differential brakes activated from the rudder or the joystick.
3. Select which mouse button you want to:
 - Tune Radio to Player
 - Send Check Six message to Player
4. Click to enable or disable the Offline Settings. When the button is lit that setting is enabled.
 - *Unlimited Ammo*—Select to never run out of ammo.
 - *Invulnerable to Weapons*—Select to never have your aircraft damaged when hit by enemy fire.
 - *Disable Blackouts/Redouts*—Select to disable the blackouts and redouts that occur when pulling so many Gs that the blood supply to the brain is affected.
 - *Disable Structural Limits*—Select to stop the plane breaking up when being pushed beyond its limits (see [“Structural Limits” on page 55](#)).
 - *No Cockpit*—Select to have no cockpit displayed when flying.
5. Select one of the four offline missions.
 - *Free Flight*—An open arena with no enemy pilots. Practice takeoff, landing, and maneuvering to become familiar with various aircraft.
 - *Target Drones*—An open arena with one drone circling each enemy field. Use to practice shooting down almost sitting targets.
 - *Air Attack*—And the enemy just became better—and more numerous. This mission gives a close approximation to the online dogfighting. Try to shoot down the enemy before they shoot you!
 - *Bomber Ambush*—There is a squadron of Bombers on its way to bomb your airfield. Try to take them out before they arrive.

To practice attacking ground vehicles offline:

- a. Select the *Bomber Ambush* mission.
- b. Open the radio bar and enter **.offbombermodel ground**
- c. To return to flying against aircraft, open the radio bar and enter **.offbombermodel ground**

6. Select the AI level of your enemies:
 - *Ace*
 - *Veteran*
 - *Rookie*
7. Enter the number of enemies you want flying against you. Zero gives a random number of enemies. There are always an equal number of pilots flying your country as there are enemies, plus yourself and any Wingmen.
8. Enter the number of Wingmen you want flying with you.
9. Select a time of day from the drop-down menu.
 - Dawn
 - Morning
 - Noon
 - Afternoon
 - Evening
 - Dusk
 - Night
10. Enter a starting altitude. Zero starts you on the runway.

Sound Settings

To adjust the Sound levels, select *Setup* from the Main menu, and then the *Sound* tab.



Sound Setup Screen

Move a slider to the right to increase the volume and to the left to decrease it.

Color Settings

To adjust the Color levels, select *Setup* from the Main menu, and then the *Color* tab.



Color Setup Screen

Use the color sliders to change the shade of the icons displayed while flying.

The message box transparency can also be changed by moving the *Msg Box Transparency* slider.

Video Settings

Generally, the video settings affect how *WarBirds III* looks when you are flying. Upping a setting improves the look, but it also tends to decrease the number of frames per second (fps) your computer can process. For further information about changes you can make to improve your fps, please see [“Trouble Shooting” on page 129](#).

To adjust the Video levels, select *Setup* from the Main menu, and then the *Video* tab.



Video Setup Screen

1. Set the Var Level between 250 to 50,000. Higher numbers look better, but may lower frame rate.
2. Set the Texture size. This allows you to limit how much VRAM is used by restricting the size of the textures used. *No Limit* uses whatever size the original artwork is, the others set the maximum.
3. Select the amount of detail seen on the ground objects. More slows the system down, but the objects on the ground are more detailed and prettier.
4. Select how far away the highest Level Of Detail (LOD) on the aircraft is active. Higher may lower frame rate.
5. Turning off Environmental maps removes the metallic reflection

effects on some aircraft (P-51D for example). May improve frame rate on some systems if turned off.

6. Select the font size of type in the radio bar and GUI.
7. Select the quality of the appearance of the terrain. Higher slows the sytem down, but is prettier.
8. Select the maximum distance out to render ground clutter. 0 disables it completely. Ground Vehicles beyond your clutter range setting are not displayed.

Stick Force

For those with a force feedback joystick, which supports Direct X, these settings can be customized to your personal preferences.

To adjust the Stick Force levels, select *Setup* from the Main menu, and then the *Stick Force* tab.



Stick Force Setup Screen

1. Click on the box next to Enable to toggle force feedback on and off.
2. Change the sliders to reflect how much feedback you want for a particular effect.

Customizing the Input Mapper

WarBirds III allows you to customize which commands are sent by each key on the keyboard, and button or hat on your joystick.

To customize your Input Mapper, select *Setup* from the Main menu, and then the *Input Mapper* tab.



Input Mapper Setup Screen

1. Select a Stick Set, 1, 2, 3 or 4. Stick Sets are changed ingame by pressing **F5**, **F6**, **F7**, or **F8**.
2. Select an action from one of the four drop-down menus, View, Gunnery & Bombing, Flight, or Misc.
3. Select *Press to Change Control* on one of the four Control sections. Up to four Controls can be set for each action.
4. Press the key or button to perform the selected action, or select *Hat* and choose an option from the drop-down menu. A key or button can be selected to perform more than one action. Setting **F** to fire both your primary and secondary weapons, for example.
5. Repeat until you have all the stick sets set up with your preferred controls for each action.

To check whether a key or action is already in use, click the *Key Look Up* button, then press or click the controller button or hat.

Flying Basics

Selecting an Aircraft or Ground Vehicle

The Plane Selection screen is the default screen when you first enter the game. If it is not already in view, exit the Setup screens by selecting *OK* or *Cancel*, or select the *Plane* tab from the top of the Selection screens.



Plane Selection Screen

1. Select *Fighter* or *Bomber* in the bottom left, depending on which type of aircraft you want to fly, or *Other* to drive a ground vehicle.

2. Then click the drop-down menu to select an aircraft or ground vehicle from the list.
3. Select a Load Out from the drop-down menu, to change the gunnery, rockets, bombs, torpedos and paratroopers carried.
4. Select whether to fly with the *Easy* or *Realistic* flight model. Then select the distance at which you want your canon and machine guns to converge, and the percentage of fuel with which your aircraft starts out.

Selecting a Country & Field

Select the *Field* tab from the top of the Selection screens. The Field screen is displayed.



Field Selection Screen

1. Select a Terrain from the drop-down menu when flying offline. In the online arenas the map is set by the arena.
 - Europe
 - Malta
 - Tunisia

The “b” terrains are 256x256.

2. Select a Country color from the drop-down menu on the bottom left. Either Red, Green, Gold, or Purple (not all countries are available when flying in certain online arenas).
3. Select a Field on the map by clicking on it, or by selecting it from the drop-down menu. When online, right-click (Ctrl + click for Macs) on Carriers or any drone blips to join as a gunner. Your location is indicated by parentheses, **[F5]** for example.
 - **Cv**: Carrier vehicle
 - **P**: Outpost
 - **Fs**: Small field
 - **T**: Town
 - **Fm**: Medium field
 - **V**: Village
 - **Fl**: Large field

NOTE: For additional terrains, go to the Downloads page at <http://www.ient.com/warbirds/downloads.html>.

Map Controls

- Zoom in and out of the map by using the **]** and **[** keys, pan using the arrow keys. Or click on the Plus, Minus and arrow buttons on the screen.
- Toggle the floating map by using **F1**.
- Toggle the reference grid by clicking the Grid button.

Taking Off

These instructions assume that you are flying using the *Realistic* flight mode. If you have *Easy* mode selected, takeoff is much easier and some of these steps are not necessary. See Step 4 of *Selecting an Aircraft or Ground Vehicle* on [page 26](#).

1. Select *Fly* from the Main menu.
2. You are seated in the cockpit on the airfield. Release all controls and press **F12** to center your joystick (this is very important).
3. Ensure that the throttle setting is on zero, and then press **Shift + E** to start your engine(s).
4. Use **=** or a throttle control to rev up the engine to about 25 percent of its full power. Using the rudder make your way to the end of the runway, if you are not already there, and start rolling straight down the runway.

5. If the aircraft starts yawing (veering to one side or the other), press **A** to steer left, or **D** to steer right (do not hold the keys down). If you have rudder pedals or a twisty joystick, use them or that instead.
6. Increase engine power to full by pressing **=** or **0**, or by moving the throttle control as high as it can go. Press **X** while gaining speed to trim the aircraft.
7. When the airspeed indicator shows 100 mph or more, ease back on the joystick to lift off.
8. Once airborne, press **G** to raise the landing gear, and then **X** to trim the control surfaces.
9. Move the joystick as gently as possible until you have gained some airspeed and altitude, to avoid paper darting the ground.
10. Center the rudder by pressing **S**, and when heading in the right direction and at the preferred altitude press **X** to engage the autotrim, which keeps the plane flying straight and level.

Autopilot Settings

Autotrim mode: Press **X** to engage the autopilot. The plane flies straight and level until **X** is pressed again or until you take over the controls once more.

Speed mode: Press **Shift + X** to put the autopilot in speed mode. The autopilot attempts to maintain the speed of the plane, by climbing or descending, as necessary.

Angle mode: Press **Ctrl + X** to instruct the autopilot to maintain the climb or descent angle of the plane at the moment it was engaged. If necessary, the plane descends to gain the speed to maintain an angle of ascent. Be careful if your plane is descending when you engage Angle mode, or you could crash.

Views

3D Cockpits

Use the View system to look around and keep your situational awareness (SA) high.

There are three view modes to toggle between in the 3D cockpits:

- Snap
- Pan to Snap
- G-Force

Shift + O jumps between the different view systems.

Snap View: The default view is the Snap view. This is when you press a key, or move the joystick hat and the view "snaps" to that position. When you release the key, or joystick hat, the view returns to the front.

Pan to Snap View: Pan to Snap is when pressing a key or joystick hat the view pans around and stops at the view position. For example, pressing **2** on the numpad pans the view from the front to the side and then to the rear.

G-Force View: G-Force view is as Pan to Snap, but the speed at which the view changes is limited by the number of Gs being exerted on the aircraft at the time.

Stickysnap: In addition, the views can be set to "stick". When "stickysnap" is enabled, pressing a key or moving the joystick hat changes the view to that position, and it stays there until another key is pressed, or the hat moved.

Type **.stickysnap** in the radio bar to enable it and **.returnsnap** to return to the default.

Changing Field of View

To zoom out (make field of view bigger), press **V**, to zoom in (make field of view smaller), press **Z**.

To return to the default field of view, press **Ctrl + V** or **Ctrl + Z**.

F4 jumps to gunsight view, **F11** jumps to instrument view.

Numpad Keys

- Press **4** and **6** on the numpad to look left and right, respectively.
- Press **2** to look behind you.
- Press **5** to look straight up.
- Pressing different combinations of keys, and using **7**, **9**, **1** and **3** gives the 45 degree views.

Joystick Hat

- Move to the right to look right or left.
- Move down to look behind you.
- Move up to look straight up.
- Move to the quarter views to look in that direction.
- Hold down **5** on the numpad and move the hat to look up in that direction.

Finding & Attacking Targets

Dogfighting

The Map is used to find the nearest action in the air. Each sector on the Map is 20 miles across.



1. Put the aircraft on autopilot by pressing **X** on the keyboard. The aircraft flies straight and level until either **X** is pressed again or you take over the controls once more.
2. Press **F1** to access the transparent map, **F1** again to make it opaque, and again to close the map. Use the zoom keys, **Shift** + **[** and **Shift** + **]** to zoom in and out.

3. There is one white arrow showing the direction in which you are travelling. The colored dots represent planes in the air, the color of the dot being the color of the country that plane is flying for.
4. Head for an enemy, and press **F1** again to close the map (twice, if necessary).
5. When a target comes into view, an enemy is labeled with the plane type, friendlies with their callsign (don't shoot at friendlies!). The number beneath the label tells you how far away the target is in hundreds of yards. If your guns are set to converge at 500 yards, that is the range you want to be close to.
6. Press **F9** to engage WEP (war emergency power), to boost the power to the engine.
7. Lead the target, so that your bullets reach the place where the target will be. If you fire straight at the target (except at very close range), your tracers pass harmlessly behind it.
8. When the target is in your sights at 500 yards or less, lead it just a bit...now hit the trigger button on your joystick and watch your tracers converge.

Identifying Targets & Friendlies

Use the **F2** to toggle the icons labeling the other planes:

- *Arena Default*—Shows the distance in hundreds of yards, and the pilot's callsign if friendly, the plane type if an enemy.
- *Plane Type*—Shows the distance and plane type.
- *Range Only*—Shows only the distance.
- *Off*—Shows no icon at all.

NOTE: When online, the arena settings specify which icon labels are available.

Landing

When you have flown around for a while and are out of bullets or low on fuel, it is time to head for home. The key to a good landing is setting up a good approach. If you are offline and do not want to practice landing click the **X** at the bottom right of the screen.

1. Find your airfield on the Map (**F1**—use **Shift +]** and **Shift + [** to zoom in and out) and line up with the runway while you are still three to five miles away, at an altitude of between 1000 and 1500 feet.

2. Throttle back until your airspeed is about 120 mph. More than that is too fast for a safe landing, any less and you may fall out of the sky before reaching the runway.
3. Press **G** to lower the landing gear.
4. Press **Shift + Q** to lower your flaps fully.
5. Approach the runway in a shallow descent, using the throttle (- and =) and joystick to control your speed and rate of descent. Ideally, you should pass over the beginning of the runway at an altitude of less than 75 feet, and at a speed of just under 100 mph.
6. Just before touchdown, gently pull back on the joystick, raising the nose just enough for you to see the horizon below your gun sight.
7. When the tires hit the tarmac, reduce engine power, and press the **Spacebar** to engage the wheel brakes. The brakes cause the nose to fall forward. Releasing them or pulling up on the joystick corrects this.
8. Once the plane has stopped, type **.exit** in the radio buffer to return to the Control Tower.

Do not be discouraged if you find landing difficult at first, it does become easier with practice.

Bailing

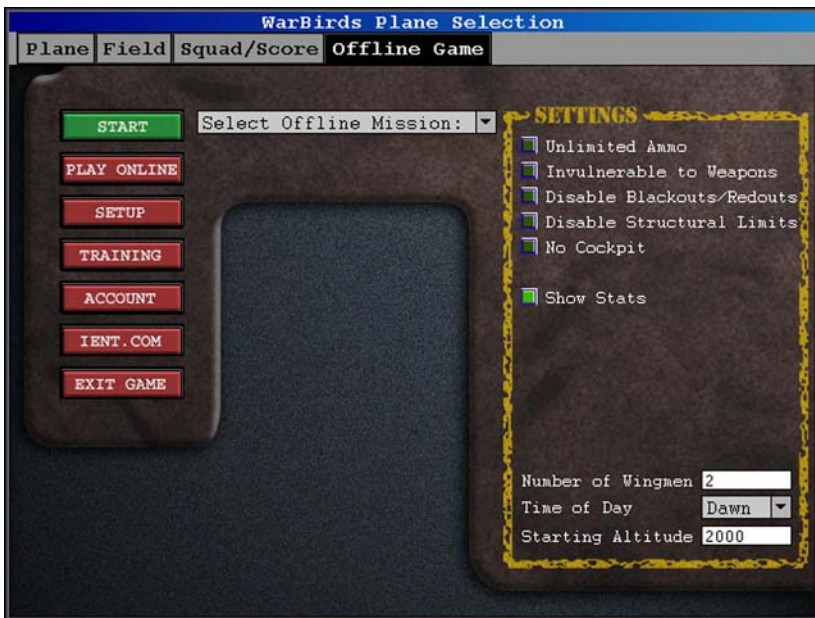
To jump out of the aircraft before it crashes, press the **Enter** key three times in a row when in flight. The canopy of the cockpit opens and you are in free fall.

The chute opens automatically at 500 feet, but to open it earlier, press **Enter** three times in a row again. The chute falls very slowly and there is no way out of it until you land, so opening at high altitudes is not recommended unless you have a lot of time on your hands and want to enjoy the view.

Offline Missions

Offline Games

There are several preset games available offline in *WarBirds III*. Select the Offline Game tab to display the Offline Game Selection screen.



1. Select one of the preset online Missions:
 - *1v1 Air Attack*—Take on an Ace pilot one-on-one. You can select any plane for this mission, and so can he!
 - *2v2 Air Attack*—You have one wingman to assist in downing two enemy Aces. Your wingman mimics your flight.

- *Air Attack*—This is the closest to an online aerial dogfight you can get without going online. Join in the swirling furball of the sky. Try to pick an enemy to shoot down, but be constantly aware of all that is around you.
- *Bomber Ambush*—There is a bomber formation on its way to bomb your airfield. It is up to you and your two wingmen to stop them.
- *Carrier Practice*—Your Carrier group is on a mission. Defend attacks with one of the following aircraft:

F6F-5	F4F-4	RM-2	F4U-1D
A6M2	A6M3	A6M5a	Seafire II
F4U-4	F4F-3	SBD-5	

- *Free Flight*—An open arena with no enemy pilots. Practice taking off, landing, and maneuvering to become familiar with various aircraft. Further options can be set using the Flight screen (see [page 17](#)).
- *Landing Final*—You're on course for the perfect landing at Field 1. Try to keep your cross hairs on the red beacon for the correct angle of descent. See ["Landing" on page 31](#) for further information about landing.
- *Malta Assault*—Malta is under attack, and it's up to you to jump in your Panzer and defend against the invaders. See ["Ground Vehicles" on page 67](#) for more information about driving and firing from tanks. Alternatively, jump in one of the aircraft available and defend from the sky.
- *Sea Attack*—A Carrier fleet is attacking from the north. Jump in your Ju88A-4 and try to torpedo the fleet. See ["Torpedo Attacks" on page 74](#) for more information on setting up a torpedo attack.
- *Target Drones*—An open arena with enemy aircraft flying around waiting to be shot at. Use to practice firing your guns at targets that don't shoot back!
- *Tunisia Assault*—Head for Village 25 with the rest of the tank platoon. Enemy tanks are on their way to meet you... See ["Ground Vehicles" on page 67](#) for more information about driving and firing from tanks.
- *Tunisia Invasion*—A Carrier fleet is on its way, try to bombard it with your tank from the shore. See ["Ground Vehicles" on page 67](#) for more information about driving and firing from tanks.

2. Click to enable or disable the Offline Settings. When the button is lit that setting is enabled.
 - *Unlimited Ammo*—Select to never run out of ammo.
 - *Invulnerable to Weapons*—Select to never have your aircraft damaged when hit by enemy fire.
 - *Disable Blackouts/Redouts*—Select to disable the blackouts and redouts that occur when pulling so many Gs that the blood supply to the brain is affected.
 - *Disable Structural Limits*—Select to stop the plane breaking up when being pushed beyond its limits (see [“Structural Limits” on page 55](#)).
 - *No Cockpit*—Select to have no cockpit displayed when flying.
3. Select whether to have your stats displayed while flying.
4. Enter a starting altitude. 0 will start you on the runway.
5. Enter the number of Wingmen you want flying with you.
6. Select a time of day from the drop-down menu.

NOTE: Most of the missions set 4, 5 and 6 for you and will revert to the mission setting when you click *Start*, should you change any.

Offline Practice

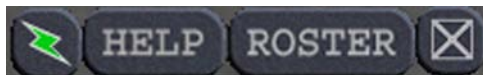
Options for practicing offline are on the Flight Setup screen. To adjust the Flight and Offline options, select *Setup* from the Main menu, and then the *Flight* tab.



Flight Setup Screen

- Click to enable or disable the Offline Settings. When the button is lit that setting is enabled.
 - Unlimited Ammo*—Select to never run out of ammo.
 - Invulnerable to Weapons*—Select to never have your aircraft damaged when hit by enemy fire.
 - Disable Blackouts/Redouts*—Select to disable the blackouts and redouts that occur when pulling so many Gs that the blood supply to the brain is affected.
 - Disable Structural Limits*—Select to stop the plane breaking up when being pushed beyond its limits (see [“Structural Limits” on page 55](#)).
 - No Cockpit*—Select to have no cockpit displayed when flying.

- *Show Help Bar*—When checked the help buttons are displayed.



2. Select one of the four offline missions (see [“Offline Missions” on page 33](#) for further options).
 - *Free Flight*—An open arena with no enemy pilots. Practice takeoff, landing, and maneuvering to become familiar with various aircraft.
 - *Target Drones*—An open arena with one drone circling each enemy field. Use to practice shooting down almost sitting targets.
 - *Air Attack*—And the enemy just became better—and more numerous. This mission gives a close approximation to the online dogfighting. Try to shoot down the enemy before they shoot you!
 - *Bomber Ambush*—There is a squadron of Bombers on its way to bomb your airfield. Try to take them out before they arrive.

To practice attacking ground vehicles offline:

 - a. Select the *Bomber Ambush* mission.
 - b. Open the radio bar and enter **.offbombermodel ground**
 - c. To return to flying against aircraft, open the radio bar and enter **.offbombermodel ground**
3. Select the AI level of your enemies:
 - *Ace*
 - *Veteran*
 - *Rookie*
4. Enter the number of enemies you want flying against you.
5. Enter the number of Wingmen you want flying with you.
6. Select a time of day from the drop-down menu.
7. Enter a starting altitude. Zero will start you on the runway.

Offline Dot Commands

.offairattack	Sets offline game to air attack (AI planes).
.offfreeflight	Sets offline game to free flight
.offbomberambush	Sets offline game to bomber mission

Air Attack Mission

.offrps show all	Display all the available AI-controlled aircraft.
.offrps add <model>	Adds <model> to the user-selected list of AI-controlled aircraft. Once the user has created this list, the AI-controlled aircraft are chosen from it.
.offrps show selected	Displays the current user-selected list of AI-controlled aircraft.
.offrps random	Returns to the normal, randomly-selected AI-controlled aircraft.
.offrps nme <x>	Sets number of enemy aircraft where x = 0 to 4. Specifying 0 returns to random numbers of friendly and enemy.

Bomber Ambush Mission

.offbombers <x>	Sets the number of AI-controlled bombers, where x = 1 to 8.
.offbombermodel show	Displays the available AI-controlled bomber models.
.offbombermodel <model>	Specifies the AI-controlled bomber model, instead of a random selection.
.offbombermodel random	Returns to a random selection of AI-controlled bomber models.
.offbombermodel ground	Toggles the selection of ground vehicles instead of aircraft in the mission.

Flying Online

When you have shot down lots of drones (offline targets) and become proficient at taking off and landing, and at flying a variety of aircraft, you are ready to engage in some real combat.

Points to Ponder while Flying Online

- Learn the View system (see [“Views” on page 29](#)). Situation Awareness is the key to life online.
- If you've been practicing in easy mode offline, the aircraft handles very differently online where easy mode is disabled in most arenas.
- Redouts and blackouts occur online. If your screen turns red or black you are pulling either too few or too many Gs.
- Don't fire on your own color (country), you'll only damage yourself if you hit. Your gun sight indicates your color (country).
- The Ack Weenies are the flak and antiaircraft fire from enemy gun positions.
- Ask for help. Everyone was a newbie once, and you normally receive polite answers, particularly from pilots flying the same color.
- Try to fly in a group. A lone pilot is easily picked on by enemies, with no one around to give warning.
- Attend Training sessions. The Trainers are volunteer, experienced flyers who can improve your flying skills.
- Anyone can fly any plane available in the RPS (Rolling Plane Set) in the Reg-Main and EZ-Main arenas. There are restrictions in the other arenas.

Creating a *WarBirds* Account

To fly online you need an Internet connection, an Internet service provider (ISP) and an account with iEN. You need a credit card to sign up over the Internet.

- *Premium*—**\$24.95** is charged to your account each month and you can fly an unlimited number of hours in any of the WarBirds arenas for that fee.
- *Standard*—**\$19.95** is charged to your account each month and you can fly an unlimited number of hours in the ACAs (demo arenas). The first 15 hours of flight in any pay arena is covered by the monthly fee, and any time spent over the first 15 hours is charged at \$1.99 per hour.
- *Basic*—**\$9.95** is charged to your account each month and you can fly an unlimited number of hours in the ACAs (demo arenas). The first 5 hours of flight in any pay arena is covered by the monthly fee, and any time spent over the first 5 hours is charged at \$1.99 per hour.

To Create an Account:

Go to http://www.ienet.com/warbirds/academy_create.html and click the *Sign Up* icon.

Alternative payment methods

When paying by one of these methods, please include your name, mailing address, email address and the price plan you want to subscribe to in your correspondence.

Your account will be created as soon as we receive the first payment and we will email your account Login ID and password to you.

US & Canadian Citizens: We accept check or money order payments mailed to:

iEN Billing Dept,
124-126 Quade Drive,
Cary, NC 27513

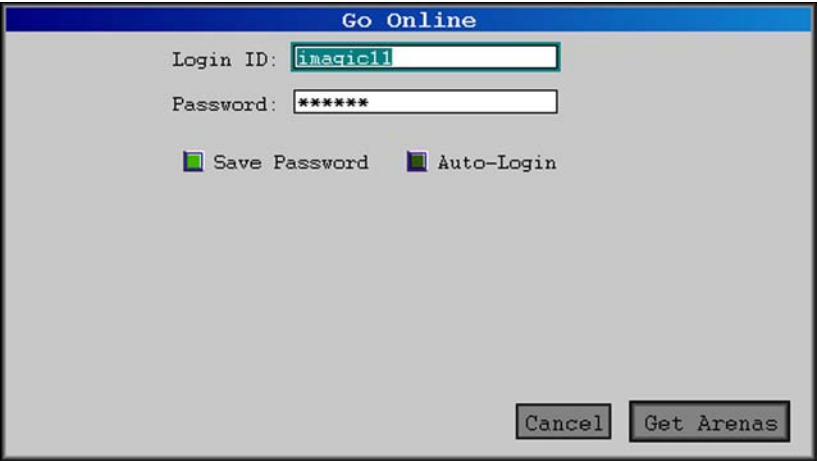
We can also bill you using an automated checkdraft from your checking account. Just send a copy of a voided check to us.

Non-US Citizens: We accept money order payments in US dollars mailed each month to the address above.

Payment should be received before your billing date each month.

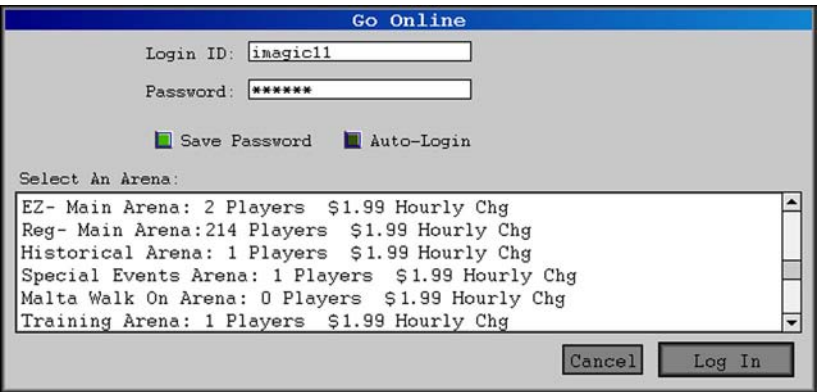
Logging into an Arena

- 1. Start *WarBirds III*.
- 2. Select *Play Online* from the Main menu. The Go Online window is displayed.



Go Online Window

- 3. Enter your *Login ID* and *Password*, and then click *Get Arenas*. If you have checked *Save Password*, you do not need to enter the password each time you login. If you have checked *Auto-Login* , login occurs automatically when you select *Go Online* from the Main menu.



Arena Selection Window

4. Select an arena from the drop-down menu, and then click *Log In*. The first time you play online, you are asked to enter a six-character callsign—this is the label by which you are identified within the game.
5. From the Tower, select a plane, a country and an airfield (see [“Preflight Selections” on page 13](#)). To view the action around a particular field or carrier, select it on the Field screen, then move the selection window to one side by clicking and dragging the top bar, and then use the joystick to look around.
6. Click *Start*. Release all the controls and press **F12** to center the joystick.
7. Once you are airborne put the plane on autopilot (**X**) and press **F1** to consult the map. Locate the action and set a course for that general area. As you approach, scan the skies to locate friends and foes. Friends are the same color as you, enemies are not.

Private Arenas

The Private Arena feature is primarily for Special events, and Private arenas can only be enabled by Community Managers (CMs). When a Private Arena has been set up for an event, all those participating are notified of the password.

To join a Private Arena launch *WarBirds III* as usual, and before clicking *Play Online*, open the radio buffer and type **.privatearena password**

For example:

1. Launch *WarBirds III* as usual.
2. Press **I** to open the radio buffer.
3. Type **.privatearena 1a2B3c** where 1a2B3c is the password (passwords are case sensitive).
4. Select *Go Online* from the Main menu, the Login window is displayed. Enter your Login ID and Password as usual.
5. In the Arena menu select the Private Arena, and then click the *Login* button.

Please note if you exit *WarBirds III* you must return to Step 1.

To enable the public arenas again, type **.privatearena**.

Viewing the Activity around the Field

To view the activity around a field before deciding to hit the runway, move the Selection and Setup screen by clicking and holding down the left mouse button on the top bar of that window, and then move it out of the way.

Move the joystick around to view the area around the Control Tower.

Using the Radio

Chatting using the keyboard is the preferred method of communication in *WarBirds III*, as everyone has access to it. English is the language employed by most pilots, but pilots from many other countries also fly. Have patience with these players, English is not their first language, and they are probably asking for help. Help them if you can, or ask others to do so.

If a player you are trying to chat with does not reply immediately, assume that they are in the middle of combat and too busy to type.

Radio 1 Radio 2 Radio 3 Radio 4



Radio Bar

Message Display

The Radios channels provide the means to socialize with other players. There are also messages giving vital tactical information and situation updates. The up and down arrows next to the incoming messages display area allow you to scroll through recent messages. Press **Tab** on the keyboard to toggle the number of text lines displayed.

Change the width of the radio buffer by typing **.radiowidth <xxx>** where xxx is between 200 and your screen res-32. 440 is the default.

Radio Tuning



Open the typing buffer by pressing **I**, **Shift + I**, **Control + I** or **Alt + I**, depending on the channel to be opened.

Tune a radio by clicking in the radio slot, and then typing the number. There are 106 different channels, any of which can be used. The channels serve different purposes and reach different ears, so depending on what you need to say and to whom, use the appropriate channel.

The host command **.radio <x yyy>** where **x** is the radio number and **yyy** is the channel, can also be used to tune the radio.

Channel 100: This is the common channel—every player can send and receive messages when tuned to channel 100. If you are in the Control Tower or a designated Headquarters screen, however, only players in that room receive your channel 100 transmissions.

To communicate with players in flight, use one of the squadron, country or private channels, as listed.

Who Receives	Channel Number	Message Color
Everybody	Channel 100	Gray
Red	Channel 101	Red
Green	Channel 102	Green
Gold	Channel 103	Gold
Purple	Channel 104	Purple
Members of the same squadron	Squad Channel 110	White
Crew members of the same plane	Intercom 111	Dark Green
Individual players	Player callsign	Bright White
Individuals in a country who are tuned in	Channels 1-50	Dull Yellow
Any individual who is tuned in	Channels 51-99	Dull Yellow
Everyone	Messages from host	Yellow
Everyone	Messages from Game Managers	Blue

NOTE: Only Radio One can be tuned to channels 1-99.

When you first enter the arena, Radio One is tuned to your country channel and Radio Two is tuned to everyone (100).

Once you have tuned your radios, the settings are retained.

Click on an aircraft in flight to tune Radio Four to that pilot (this can be changed to right-click using the Flight Setup screen, see [page 17](#)).

Enter the command **.radio** to display a summary of your currently tuned channels.

Transmitting a Message

To quickly send a message on a particular radio channel, use the appropriate key to open that channel, then type your message and press **Enter**.

<i>Radio</i>	<i>Key Press</i>	<i>Radio</i>	<i>Key Press</i>
One	/	Three	Ctrl + /
Two	Shift + /	Four	Alt + /

Example: If you are flying for Red and you leave Radio 1 tuned to 101, and Radio 2 to 100, in flight press **Shift + /** before typing the message to transmit to everyone, and press **/** to transmit to Red players only.

When in a squadron, tune Radio 3 to 110, and communicate with other members of the squadron by pressing **Ctrl + /** before typing the message.

Right-click (or **Ctrl + click** for one-buttoned mouse Mac users) on a fellow countryman to send a “6” call to that pilot (this can be changed to left-click using the Flight Setup screen, see [page 17](#)).

Receiving Messages

You receive messages from other players if they are sent on a channel you can listen to. These are color coded according to the channel on which they are sent.

Ignoring Other Players

There is also an ignore command for filtering out those players who just seem to have a little too much to say. Type **.ignore <xxxxxx>** where xxxxxx is the callsign of the player in question, and radio messages from that player cease to be seen by you.

To reestablish communications with an ignored pilot, press a Radio key: **I**, **Shift + I**, **Control + I** or **Alt + I**, and then type **.listen** <xxxxxx> where xxxxxx is the handle of the pilot. Type **.listenall** to reestablish communications with all ignored pilots.

If you leave the game, all ignored players are defaulted to listen mode again.

Game Managers

Game Managers' names are always in capital letters, and always in blue. These personnel are on the development team, and are logged onto the server side of the game. Their presence is for testing and diagnosing problems within the game environment, and in some cases sorting out troublesome players.

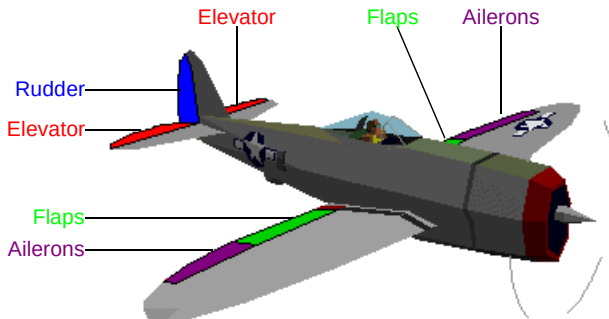
They have absolute authority.

Maneuvering

Control Surfaces

There are three dimensions within which the aircraft moves, and there is a simple control to change the direction of movement in each of those three dimensions:

- Ailerons control Roll
- Rudder controls Yaw
- Elevators control Pitch



Control Surfaces

Roll

The ailerons, located on the outer part of the trailing edge of the wings, control the roll or bank of the airplane. The two ailerons (one on each wing) work in opposite directions to each other. When the left one is raised, the right one is lowered. The side to side movement of the joystick controls the roll or bank of the aircraft.

Pitch

The pitch is the up or down angle of the aircraft, controlled by the elevator. It is located on the trailing edge of the horizontal tail assembly and is controlled by the forward and backward movement of the joystick. Pulling the joystick back moves the elevator up, causing the nose of the aircraft to point up. Pushing the joystick forward moves the elevator down, pitching the nose down.

Yaw

On the trailing edge of the vertical stabilizer on the tail is the rudder. This controls the yaw, or the left and right turning movement of the aircraft. On a real aircraft the foot pedals control this. For those who do not have pedals, the rudder can be manipulated using **A** (left), **S** (center), and **D** (right), or a 3D joystick.

Flaps

The flaps are located on the inside of the trailing edge of the wings, inboard of the ailerons. When this set of control surfaces is lowered the cross-sectional shape (airfoil) of the wing changes. Lowering the flaps creates a greater surface area, increasing lift and drag. Flaps are most commonly used for landing.

Trim

As a plane flies at a particular altitude, weight, and speed, it flies straight and level with the stick perfectly centered. As speed increases the nose tends to rise, and the plane tends to yaw and roll to the right. As speed decreases the nose tends to lower, and the plane tends to yaw and roll to the left.

To control a plane at a wide range of speeds, there are trim tabs that are adjusted to allow the plane to fly straight and level for many different sets of conditions. When a plane is “in trim” it is trimmed for straight and level flight with the joystick centered at that airspeed and condition. When a plane is “out of trim” its joystick center is far from the center of its travel, which means that input is needed to make the plane fly straight and level.

This creates two problems. Firstly, since the joystick center is not the same as the physical force center it makes flying straight and level tricky, and making small, gentle adjustments all but impossible. Movements tend to be jerky and really inaccurate, which causes problems when lining up guns on enemy planes. Gunnery is much easier and smoother when the plane is in trim.

Secondly, if the center of force is too far from the joystick center, you simply run out of stick. If you have to have the stick 3/4 of the way back to maintain level flight there is only 1/4 of normal movement remaining to be used for maneuvering. In this instance, you would barely be able to maneuver at all.

The solution is to trim the plane for a speed close to that at which you are fighting. In *WarBirds III*, the following keys adjust the plane's trim:

Nose down elevator trim	I
Nose up elevator trim	K
Left rudder trim	J
Right rudder trim	L
Left roll trim	M
Right roll trim	,

Autotrim

To take the tedium out of making constant adjustments to the trim manually, there are the autotrim keys (see [“Autopilot Settings” on page 28](#)). When autotrim is engaged, it takes a few moments for the plane to get in trim. The plane can be left flying on autotrim, or you can take over the controls once again, simply by moving the joystick.

Ideally, the plane should be trimmed for the speed it will be fighting at, so that the joystick is centered when you really need it to be. Take the type of plane being flown into consideration when deciding on the best speed to have the plane in trim.

Maneuvers

Aileron Roll

The Aileron Roll is a complete roll, revolving once around the fuselage.

To perform an Aileron Roll, move the joystick to the right or left and hold it there until the plane is upright once again. Straighten out and press **X** to return to straight and level flight.

Break Turn

The Break turn is the standard evasion against attack from astern. You turn as hard as possible in the direction of the attacker, to increase deflection quickly, and make your plane harder to hit. It is best to execute a break turn when level or lower than the attacker.

Never break above your opponent, as you lose speed and your size as a target increases.

To perform a Break turn, move the joystick to the right or left, and then pull back on the joystick to tighten the turn. Straighten out and press **X** to return to straight and level flight.

Chandelle

The Chandelle, in very simple terms, is a climbing turn. The turn can range from 90 to 180 degrees. It is a low-G move, and aims to conserve as much energy as possible. The Chandelle allows you to remain near the fight, and to keep visibility on the fight or target as you look down and back over the wing, while gaining altitude.

To perform the Chandelle, move the joystick to the right or left, then pull the stick back gently to climb while you are turning. Once you have finished the turn, you are at a higher altitude, and on a different heading. Center the stick and return to straight and level flight by pressing **X**.

Immelmann Turn

The Immelmann turn is a simple yet very effective maneuver under the proper tactical circumstances. The name is derived from its inventor, Max Immelmann, a WWI German Ace who devised the method. In reality, the version most people are familiar with today from air shows is not the one that Max Immelmann found so successful.

To perform the air show version, from flying level with good energy, pull back on the joystick, bringing the aircraft into a steep climb. Maintain the climb until the aircraft passes through the vertical and completes a half loop. At the top of the loop, the plane is inverted. Roll it back to the upright position. It is now at a higher altitude and is traveling in the opposite direction.

This air show version can be flown in different ways. If your opponent has enough energy to follow you into the loop, there is a moment of inertia where your speed is low, and you are a sitting target. The reversal can be aggressive, limiting the altitude gain in exchange for maintaining additional speed after completion, or it can be very gradual, with completion at a higher than normal altitude, but with the aircraft at near stall speed.

Max Immelmann's actual combat Immelmann is also known as a version of "Boom and Zoom" (BnZ). He would make a high energy pass at his opponent, pulling up into an efficient vertical climb until he was sure he was out of the range of his enemy. Then he would use a rudder reversal to drop back down from a position of advantage and repeat his attack.

Loop

The Loop is a full 360 degree rotation in pitch, in other words a vertical circle.

Perform the Loop by pulling back on the joystick and maintain back pressure as the aircraft climbs, inverts, dives and then returns to level flight, with the wings level at all times. At the top of the loop, the torque effect from the engine begins to corkscrew the aircraft counter-clockwise. Add right rudder and roll to counter the torque effects. When completed, center the joystick and press **X** to recover straight and level flight.

Scissors

The Scissors is a series of turns designed to force an attacker on your six to give up their angle advantage.

This is a very aggressive move. If you try to use it, it is important that you think aggressively. You are trying to force an overshoot—a total reversal, putting you on the attacker's six.

The steps to perform the Scissors are fairly simple, but it takes practice. The following steps assume that the attacker is on your six and at a range of 6 or 7. If they are further away, use short turns to bring them in, but do not let them get a good tracking shot at you.

It is important to fly this fight entirely in the rear view, switching from rear to top/rear, always keeping the attacker in sight, so that you can react quickly.

1. Begin with a fairly hard turn, held long enough that they have to roll and turn to keep you in their sights.
2. Once they enter the turn, roll your aircraft in the opposite direction, and then turn hard that way, keeping the nose low to conserve energy.
3. When you see their wings start to roll in answer to your turn, quickly roll back in the opposite direction, and turn that way with the nose low.
4. The attacker tries to follow, and again when they start to turn, you turn back the other way.
5. Usually, after two or three turns, they have lost their angle advantage, and are starting to wonder what has happened. This is the critical point of the fight.
6. When they are more in the top view than in the rear view, they have lost their angle, and now is your chance to attack them.

- You have got to be aggressive to do this move successfully, and be fast on the reversals.
- Try to practice this by letting someone get on your six and then shake them. Do this again and again, until you have a mental image of where they should be when you reverse. Find the right moment to make the turns for each plane you fly.
- The first left or right break is held longer than the rest—that is the one that hooks the attacker. The rest are short and fast, dictated by how long it takes the opponent to react and reverse.

Skid

The Skid is a lateral slide with a gradual loss of altitude, and is commonly used as a defensive maneuver to throw off an attacker's aim. It can be performed without incurring a large increase in speed or change of direction, while trading in only a small amount of altitude.

Perform a Skid by dipping one wing and then applying opposite rudder. The aircraft skids in the direction of the dipped wing.

While in this maneuver, the aircraft sinks and loses altitude. Because your actual direction of travel is different to the direction that the aircraft is heading, it throws off the attacker's gunnery. However, it does not take long for an attacker to adjust their aim, so do not hold the maneuver for too long.

Split-Ess

The Split-Ess is a half roll, followed by a half loop, to return to straight and level flight. It is primarily a defensive move, unless you are attacking with considerable altitude and are meeting the target nose to nose—you would then let them pass beneath you, and then perform the Split-Ess to arrive at their six.

To perform the Split-Ess, roll the plane until it is inverted and in level flight, and then pull back on the joystick. Maintain back pressure as the plane dives and then returns to normal flight.

- Practice the Split-Ess over a runway, so that you can check your heading visually.
- A variation is to perform an additional roll when you pass the 90 degree mark of the half loop. A roll effected while you are pointed straight down is a very effective escape maneuver.

Wing Over

The Wing Over is a common maneuver for altitude and position recovery after a diving attack—especially after a diving attack on a ground target.

To perform the Wing Over, pull back on the joystick to enter a climb. Close to the top of the maneuver, the aircraft should be just above its stall speed (but not stalling), apply full rudder to yaw the plane over until the nose is pointing down in the opposite direction of the original climb. Try to ensure it does not roll over onto its back when in the yaw motion. Once the nose is pointed down, center the rudder, and enter back into a dive.

- A tricky maneuver that is handy after a diving attack, setting you up for a second run.
- A very common maneuver with the “Boom and Zoom” (BnZ) flyers, especially with the fast planes.
- Performed by an experienced flyer, this maneuver can surprise a pursuer by quickly reversing on them.
- If you have a distance lead in a chase, use this to convert from a defensive posture to an offensive one. The trick is not to be shot up when reversing.

Structural Limits

There are two effects on the structural limits of the airframes, overspeed and structural failure.

Overspeeding

When the plane dives too steeply and travels too quickly, when the heavy vibration or wind force tears parts off. At these speeds, you may be experiencing blackouts, compression, or shuddering. In fact, those effects become a problem before you reach overspeed.

To avoid overspeeding the plane, when you begin to feel the plane compressing (not responding to the controls due to the force of the wind limiting movement of the control surfaces), or shuddering violently, ease back your throttle and gently pull out of the dive. Some planes are able to dive faster than others are. A little practice gives you a good idea where the limits are.

Overstressing

Structural failure occurs when pulling too many Gs overstresses the aircraft. It is heavily dependent on fuel load, ammo load, the altitude, and the plane type. There is a warning sound, like metal straining and bending, which lets you know the airframe is being overstressed. When you hear this, ease up on your controls and throttle to avoid losing important parts of your plane, such as the wings.

In the large bombers, overstressing limits are quickly reached, as the big birds are not built to withstand many Gs. In most of the fighters, you have to reach blackout, shuddering, and compression effects long before you start ripping parts off the plane.

A bit of practice lets you know how hard you can push the aircraft.

Each plane also has a gauge indicating how many Gs you are pulling (or pushing). Blackouts occur at +6 to +7 Gs, redouts occur at -3 to -4 Gs. The planes are generally tougher than you are in this regard. If you can still see, chances are your airframe is not in danger.

Spin Recovery

Spins occur when one wing stalls and pulls the plane into a spin towards the stalled wing. Normally, this is because you pulled or pushed the nose too hard at slow speeds. You feel the plane begin to “mush” and if you continue pulling or pushing too hard, the plane rolls and the nose drops. If you ease up or let go of the controls, the plane recovers very quickly.

If you continue pulling or pushing too hard, a fully fledged spin can develop. The airspeed drops and stabilizes below stall speed, and the plane rotates quickly along the yaw axis. Once you reach this point, you are unable to escape until the speed is above stall speed. Follow these steps until you see the airspeed begin to climb again, and the rotation slow down:

1. Full rudder in the direction opposite the spin. (This is confusing if in an inverted spin, but try to do it correctly.)
2. Push (or pull, if inverted) the nose towards the ground to build speed.
3. If at full throttle, ease off. If the engine is at idle, ease power on. If you have lost the engine, skip to step 6.
4. Push (or pull) the stick back and forth to develop a rhythmic swing of the nose up and down until it is pointed towards the ground, and you can keep it that way.

5. Anything else you can think of.
6. Bail out.
7. Try not to reach step 8 before step 6.
8. When you are too low to bail out successfully, adopt the last ditch panic procedure of entirely futile yanking of controls and crying.
9. Crash.

As a general rule, spins are a lot more dangerous the lower you are, since there is not as much time to recover. It is a good idea to fly a little less aggressively at very low altitudes.

Be careful not to go into a secondary spin. This occurs when the plane recovers from the first spin then enters a second one in the other direction because of the extreme position of the controls used to recover from the first. To avoid this, when you feel the plane reaching the point of recovery, ease up and be ready to neutralize the controls.

You often find that when the plane recovers, it is inverted. Do not panic, gently fly it out and roll to right it. Yanking the controls just after recovering from a spin is a certain recipe for a secondary spin.

NOTE: Being inverted or spinning for too long starves the engine of oil and causes it to seize.

Engine Management

In *WarBirds III*, oil pressure and coolant temperature have an effect on the engine. Each engine has a dial in the cockpit, with oil pressure on the left and the coolant temperature on the right. Your engine's coolant temperature rises if the oil pressure falls into the red area of the gauge for too long. Once the coolant temperature needle goes into the red on the temperature gauge, the engine may seize. Some planes take longer than others to reach this state.

Your engine's temperature can also become too high if you use the WEP (War Emergency Power, **F9**) for too long. If this happens, the WEP shuts off and cannot be used until the engine has sufficiently cooled.

There are two things that can make the oil pressure drop. One is damage to the oil system caused by enemy fire. The other is flying inverted for too long. If the oil system is hit, head for the nearest airfield or prepare to ditch. If you have to fly inverted keep an eye on the oil pressure gauge.

Bombing & Gunnery

Bombing

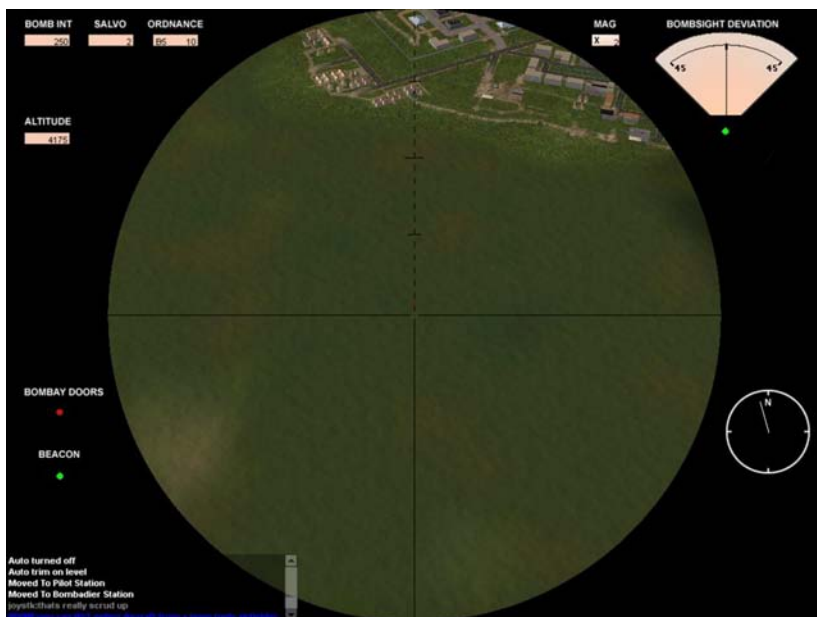
While solo combat is considered by some to be the most glamorous form of online flying, a lot of *WarBirds III* players enjoy flying a bombing mission.

Choose the bomber you want to fly from the Plane screen (see [page 25](#)). Select your bomb load using the Ordnance-Loadout drop-down menu.

Executing a Bomb Run

1. Fly in pilot mode (position1), leaving the gunners to keep enemy interceptors at bay. Observe the situation around you by using the numpad keys or the joystick hat. If you are flying an uncrewed bomber, press **Ctrl + E** to toggle the external view of the bomber.
2. Put the plane on autopilot by pressing **X**, and open the map by pressing **F1**. As soon as your bomber enters the sector where your target is located, make your approach turn—ideally at a distance of 10 to 15 miles. Press **Y** to assume the bombardier's role.
3. Now press the numpad **2** to look through the bombsight. You see the aiming cross hairs, and a bombsight deviation needle in the upper-right portion of the display. You are on the right course when that needle centers and the green light is on, but you must hold a straight and level course for the needle to center. Press **[** to increase the magnification of the bombsight view and **]** to decrease it.

Bombardier's View



Norden Bomb Sight

4. Press **O** to open the bomb bay doors. When the needle is centered, the green light is on, and the target is squarely in the cross hairs, press **B** to release your bombs, one bomb drops for each key press.
5. Press **Y** to return to the cockpit, if necessary, and return to base.

Setting up a Salvo

Bombs can be dropped individually or in salvos.

1. Type `.salvo xx` in the Radio bar, where `xx` is the number of bombs in each salvo.
2. Then type `.delay xxx` in the Radio bar, where `xxx` is 50 to 1000 and is the delay in milliseconds between each bomb release.
3. Press **Ctrl + P** while in flight to turn salvo mode on or off.
4. Follow the steps in Executing a Bombing run. When **B** is pressed `xx` number of bombs are dropped, with `xxx` milliseconds between each drop.

Gunnery

Newcomers to *WarBirds III* can gain valuable skills in leading targets and deflection shots when taking up gunner positions, without having to fly the aircraft. If you want to join as a gunner, it is a good idea to ask the pilot you want to join over the radio first.

Signing-On as a Gunner



Gunner Screen

1. Make sure that you are at the same airfield as the pilot you wish to join.
2. Select the *Gunner* tab.
3. Select a pilot or an AI General (such as PATTON) from the Eligible Pilots drop-down menu.
4. Open positions on their aircraft, ground vehicles or ships are listed. Select a position and then select *Join*.
5. Wait for confirmation from the pilot.
6. Once you have been accepted in a gunner's slot, tune one of the radio channels to 111. This plugs you into the intercom system on that channel.

Joining host drones can also be done using dot commands. Type **.aiattach <ai host> <drone #> <pos #>**

Where the ai host is one of the ai Generals, such as PATTON, the drone number is the number of the drone, and the position number is the gunner position. If you attach to a vehicle that does not have the specified position, it defaults to the driver/observer position.

For a list of hosts and drones, type **.aiattach**.

You can also join Carriers or any droness displayed on the Field Screen, see [page 26](#) by right-clicking (**Ctrl** + **click** for Macs) on it.

When attached to a drone unit, the drone can be steered via:

.nav <heading> <speed> where <heading> is 0 - 360 deg, and <speed> is capped to max for vehicle.

.auto returns navigation control to drone logic.

NOTE: This is a CM configurable command

Jumping Gunner Positions

A gunner can jump from their original slot to an empty one. To jump to another gun, use appropriate key.

1	Observer/Cockpit	4	Left	7	Bottom
2	Tail	5	Right		
3	Nose	6	Top		

Controlling the Gun

Some gun positions are electric turrets that rotate using the plane's internal power system. Others are attached to flexible mounts, so that the gunner physically controls the aiming process. The joystick is the default tool for aiming and firing guns, but if you prefer to use a mouse, press **Alt** + **M** while in position.



Powered Turret



Flexible Gun Mount

Any vacant gun positions are controlled by "Otto," the automatic gunner. Otto is not enabled in all the online arenas.

Artillery Spotting

Towns and villages provide artillery support. The artillery batteries have a maximum range of 20 miles. It takes about 60 seconds for a round to land from the time it is fired at maximum range. The town or village nearest to your position fires the round.

All ground vehicles and aircraft with more than one position (ie gunnery positions) can call for artillery.

Firing Artillery

1. Fly over, or drive to the target.
2. Open the radio bar and fire a spotting round using the **.spot** command. This round is aimed at your position plus D2 in the direction you are heading. You are notified of how long the round will take to hit.
3. Adjust the firing aim from a spotting round impact with the **.correct xxx yyyy** command, where **xxx** is the compass bearing from the previous impact in degrees from north, (not from your heading) and **yyyy** is the range from previous impact in yards up to a maximum of 1000.
4. Continue adjusting **.correct xxx yyyy** after each impact, as necessary.
5. When the spotting artillery hits the target, call in a barrage with the **.barrage** command.

For Example: Flying a B25 over a town, I open the Radio bar and type **.spot**. The "Artillery spotting round will hit in 35 seconds" message appears. The round hits about 900 yards southwest of the target. I then type **.correct 45 900** (as the round has hit to the southwest, I need it to move to the northeast, which is 45 degrees). The next round hits the target, so I call in a barrage with **.barrage**.

Firing a barrage clears all spotting and adjustment targeting. Firing a spotting round clears all spotting and adjustments. If you become confused during adjustment, simply fire another spotting round **.spot** and begin adjusting from there.

Degrees of the Compass

North is 0 degrees, and travelling in a clockwise direction from there, East is 90 degrees, South 180 degrees and West 270 degrees.

Capturing Enemy Airfields & Towns

Whenever one country loses all of its airfields, the war is over. Victory goes to the side that controls the most airfields.

There are three phases to a successful capture operation: the attack, the capture and the defense.

Closure

There are two ways to close a town or airfield. The first is to destroy all the important enemy ground assets. These include hangars, flak gun emplacements, and any enemy aircraft caught on the ground. The second is to drop a pre-determined amount of ordinance (tonnage on target), and is only available when enabled in an arena.

Destroying Assets

Destroying a hangar or other ground structure usually requires a direct hit with a bomb or a full salvo of rockets. It is possible to do the job with massed gunfire, but it takes a lot of time and effort and your chances of success are low. As a rule of thumb, a rocket does about half the damage of a 100 lb bomb. The amount of ordnance required to knock out a specific target depends on the weight of the bomb, the range and angle it is dropped from, and the accuracy of the bombardier. Bombs have a blast radius, so it is not always necessary to make a direct hit, but closer is always better.

Towns and villages act as launch points for vehicles, and provide artillery support. All objects within a town are bombable including trees and fences. The buildings within a town tie into strategy (more to follow in upcoming builds).

Antiaircraft emplacements are easy to knock out. A single bomb, rocket, or a well-aimed machine gun burst usually does the job. However, they are very small targets and unlike hangars, they shoot back. To capture an enemy field, you need to knock out all the emplacements.

Tonnage on Target

Tonnage on Target is when enough ordnance is deposited on a field or town to close it, even if there are still key structures standing.

Bombs must be dropped on the target, and hit within the Tonnage on Target radius of the field or town.

To view the status of all the fields and towns, type **.fields** in the radio bar. The last section three columns indicate how many damage points are currently inflicted, how many damage points are needed to close the field, and the rebuilding rate.

The points do not equal pounds of ordnance, as a 1000 lb GP would give a different amount of damage to a 1000 lb AP. 180,000 points is roughly equal to five B-24s carrying a full load of 1600 pound bombs. You can inflict more damage than that need for closure, which means the field then takes longer to rebuild, buying time for the troops to come in for the capture.

The Capture

Once the flak is suppressed, it is time to bring in the paratroopers to storm the airfield and capture the base. Use the Ju52 troop transport, or the M5 half track to deploy paratroopers near or over the airfield to begin the ground attack.

Troops are deployed like bombs. Open the bomb bay doors and press **B** to jettison each paratrooper. The aircraft must be at least 300 feet off the ground for the troops to land successfully. Once on the ground, the troops storm the control tower. If enough troops make it into the tower, they destroy it, completing the capture. Provide support for your troops on the ground, as the enemy will be trying to stop the ground attack.

Capture towns by taking the city hall or church building. This is like capturing an airfield tower. There is just one problem...your paratroops are not smart and will run straight into buildings, trees, etc. So, bomb a path for them, since destroyed objects do not affect grunts, or do some really good airborne drops. If you drop the paratroops inside the courtyard, their chances of getting in are much better.

Paratroopers must land within 3500 feet of the target, or they will be removed with the message "Grunt: You dropped me off target, sir". Paratroopers can be shot, or you can "capture" them by driving a ground vehicle within 15 feet of them. The Paratroopers surrender with the message "Grunt: I surrender!" and are removed.

Putting up CAP (Combat Air Patrol)

Taking possession of an enemy base usually causes a reaction on the part of the opposing country. It is not unlike jabbing a stick into a hornet's nest. Planes from any surviving enemy airfields swarm in your direction and attempt to recapture their lost asset.

Therefore, as soon as you capture a base put up an orbiting umbrella of friendly aircraft or ground vehicles if in a village. This aerial screen is your CAP (Combat Air Patrol), and the stronger it is, the better your chances are of keeping control of the base you have just taken.

Ground Vehicles

Selecting a Ground Vehicle

The Plane Selection screen is the default screen when you first enter the game. If it is not already in view, exit the Setup screens by selecting *OK* or *Cancel*, or select the *Plane* tab from the top of the Selection screens.



Plane Selection Screen

1. Select *Other* in the bottom left.
2. Then click the drop-down menu and select a ground vehicle from the list.

3. Select a country and field, town or village from the Field selection screen (see [page 26](#)). Tunisia is a good choice, with many fields close together.
4. Click *Start*.

Available Ground Vehicles

Ground Vehicle	Loadout	Ammo
M3 GMC halftrack	1x75mm M1597	59
M4A1 tank	1x30cal M2	1200
M16 halftrack	1x75mm L40 1x30cal M2	90 1200
M5 halftrack	1x50cal M2 Paratroopers	2000 4
PzKpfw IV Ausf H tank	1x75mm KwKL40 1x7.9mm MG 34	87 3000
PzKpfw IV Ausf D tank	1x75mm KwKL24 1x7.9mm MG 34	87 3000
PzKpfw V Ausf G tank	1x75mm KwKL70 1x7.9mm MG 34	82 3000

Driving a Ground Vehicle

1. Press **E** to start the vehicle's engine.
2. Press the **;** key to change into 1st gear.
3. Increase the throttle using **+** or a throttle control.
4. Continue changing gear by pressing **;** to change up, **Shift + ;** to change down. Changing down when in 1st gear puts you in reverse.
5. Use the **** key to toggle through the various views available to the driver—some of the tanks have little or no vision from the driving seat.
6. Use the joystick to move the steering wheel to the right and left.
7. Use the **spacebar** to apply the brakes.

Manning a Gun

When driving offline, and online when Otto (the automatic gunner) is enabled, your guns fire at the enemy automatically. However, you may wish to man the guns yourself.

1. Jump to a gunner position by pressing **2** or **3**—not all vehicles have a 2nd gunner position (**3**).
2. Move the gunsight around using the joystick. On some tanks, the numpad arrow keys can also be used to fine-tune your aim. On the Panzers, use the **Q** and **W** keys to adjust the sight as well.
3. Use the joystick firing button or **F** on the keyboard to fire the guns.
4. To look around without moving the gunsight, use the normal numpad view keys, except on those tanks where this fine-tunes the gunsight, where the up/down left/right arrow keys need to be used.



Looking through the M4A1's main Gunsight

When flying online you can man a gun on an AI or player controlled vehicle (see [“Gunnery” on page 61](#) for details).

Steering a Drone

When attached to a drone unit, the drone can be steered via:

.nav <heading> <speed> where <heading> is 0 - 360 deg, and <speed> is capped to max for vehicle.

.auto returns navigation control to drone logic.

This is a CM configurable command

Destroying Targets with Paratroopers

The M5 halftrack carries 4 paratroopers, which can be used to destroy or capture targets. Drive the M5 to the vicinity of the building or target to be destroyed or captured, and then press **B** to send each paratrooper on their way. See also [“Capturing Enemy Airfields & Towns” on page 64](#).

Offline Ground Vehicle Practice

To practice attacking ground vehicles offline:

1. Select *Setup* from the Main menu.
2. Select the *Flight* tab.
3. Select the Bomber Ambush mission, and any other selections, as preferred (see [“Flight & Offline Setup” on page 17](#)).
4. Open the radio bar and enter **.offbombermodel ground**
5. To return to flying against aircraft, open the radio bar and enter **.offbombermodel ground**

To join in one of the Offline Practice missions that are set up for Ground Vehicles:

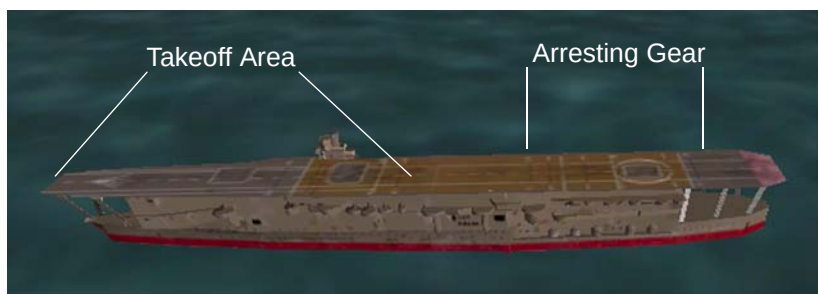
1. Select the Offline Game tab.
2. Select Malta Assault or Tunisia Assault from the drop-down menu.
3. The mission begins as soon as it has loaded, so click *Start* and join in the fun!

NOTE: See [“Offline Missions” on page 33](#) for more information about the missions available offline.

Carrier Operations

The Carrier is a moving air base whose planes can add considerable punch to any operation. Sinking an enemy ship is a major achievement—if the Carrier is close to your own airfields, it prevents any attacks coming from it.

NOTE: Carriers are only available online or in the Carrier Practice Mission (see [“Offline Missions” on page 33](#)).



Carrier Vessel

To fly from a Carrier, select one from the Field Selection screen, by clicking on it. Then, select either *Fighter* or *Bomber* from the Plane Selection screen, and then choose an aircraft from the drop-down list.

Carrier Takeoffs

Carrier takeoffs are similar to takeoffs from land runways, but with some additional risks. Engine torque can easily pull you over the side if you lose control. Your plane also needs full climbing power to become airborne once it clears the deck.

1. Select *Start* from the Main menu.

2. You are seated in the cockpit on the Carrier. A message is displayed when your chocks are removed.
3. Release all controls and press **F12** to center your joystick (this is very important).
4. Ensure that the throttle setting is on zero, and then press **Shift + E** to start your engine(s).
5. Use **=** or a throttle control to rev up the engine to full power.
6. If the aircraft starts yawing (veering to one side or the other), press **A** to steer left, or **D** to steer right (do not hold the keys down). If you have rudder pedals or a twisty joystick, use them or that instead.
7. Press **X** while gaining speed to trim the aircraft.
8. As you approach the end of the carrier, ease back on the joystick to lift off.
9. Once airborne, press **G** to raise the landing gear, and then **X** to trim the control surfaces.
10. Move the joystick as gently as possible until you have gained some airspeed and altitude, to avoid having a swim.
11. Center the rudder by pressing **S**, and when heading in the right direction and at the preferred altitude press **X** to engage the autotrim, which keeps the plane flying straight and level.

NOTE: You may wish to fully engage flaps and use WEP to help with taking off in some aircraft.

Carrier Landings

Carrier landings are sometimes described as controlled crashes, because they are such delicate maneuvers. Firstly, you need to make a slow, level, approach, with just enough power to avoid a stall. If you sense that your approach is not going well, throttle up and climb gently away, circle around and try again.

Carrier aircraft come to a bone-cracking halt by means of the arresting gear. There is a tail hook that extends down from the airplane's tail, and if everything goes right, it catches on one of the thick cables strung across the aft part of a Carrier's deck.

To execute a successful Carrier landing:

1. Approach the ship at a fairly steep angle, and line up with the deck.

2. Press **G** to lower the landing gear and deploy the tail hook.
3. Press **Shift + Q** to lower the flaps fully.
4. Use the Cockpit Lean key, **U**, to change your view.
5. Just before the wheels touch down, flare the nose up and chop the throttle all the way down.

The ship is moving, so what may initially seem like a good approach might be too short to compensate for the fact that the landing area is moving away from you. Short approaches are the most common cause of crash-landings.

Carrier-based flying is much tougher than ground-based flying. However, most veteran online players eventually strive to master it, just because it is so exhilarating when you succeed.

Manning a Gun

When Otto (the automatic gunner) is enabled, the Carrier guns fire at the enemy automatically. However, you may wish to man the guns yourself.

1. Select a Carrier by right-clicking on one on the Field Selection screen (see [page 26](#)).
2. Jump to different gunner positions by pressing the appropriate key.

1	Observer/Cockpit	4	Left	7	Bottom
2	Tail	5	Right		
3	Nose	6	Top		

3. Move the gunsight around using the joystick, or press **Alt + M** to enable the mouse.
4. Use the joystick firing button or **F** on the keyboard to fire the guns.
5. To look around without moving the gunsight, use the normal numpad view keys

When flying online you can man a gun on an AI or player controlled vehicle (see ["Gunnery" on page 61](#) for details).

Torpedo Attacks

Bombs can sink ships, but the attempt usually expends a lot of ordnance, since the ships are armored and can throw up a wall of flak. However, torpedoes strike at the hull below the water line, and a single well-placed “fish” can inflict a mortal wound on a ship.

The German Ju-88 A-4 can carry two torpedos, the Ju-87D one. Just select *Torpedo* from the *Load Out* drop-down menu on the Plane screen (see [“Selecting an Aircraft or Ground Vehicle” on page 25](#)).

Executing a successful torpedo attack is much trickier than simply dropping a tight pattern of bombs. In order to hit a ship, the plane executing the drop needs to fly steady, low, and slow—between 25 and 120 feet (8 and 35 meters) and at about 200 mph (320 kpm). This naturally makes it a vulnerable target, since every gun on the enemy carrier has a nice steady shot.

When there are enemy CAPs (Combat Air Patrols) on the scene, a torpedo plane makes an inviting, almost defenseless target, as it is only able to make the minimum of evasive maneuvers during its attack run. After you release the torpedos, get out of there as soon as you can, jinking all the while.

The angle of attack is crucial. Ideally, a torpedo plane should approach at a right angle as this gives the biggest target, but then the ship’s speed becomes an issue. Remember to lead your target—torpedoes run only about twice as fast as the ships, so getting the right lead is crucial.

A head-on or stern attack renders the torpedo plane slightly less vulnerable, but decreases its chance of scoring a direct hit.

Community

Training

If you crash and burn frequently, the chances are you could benefit from some training. The Training pages provide a wealth of hints and tips, check them out at <http://www.furball.warbirdsiii.com/krod/>. They also contain articles on aircraft and how they fly.

The Training arena is where you can gain invaluable advice on flying aircraft one-to-one with a trainer. The trainers are volunteers with years of experience flying in *WarBirds*.

There are several regular training sessions:

Euro Training

Tuesday 20.00 to 22.00 GMT/BST

Thursday 20.00 to 22.00 GMT/BST

US Training

Sunday 22.00 to 0030 EST/EDT

Monday 21.00 to 23.30 EST/EDT

Tuesday 21.00 to 23.30 EST/EDT

Wednesday 20.00 to 22.30 EST/EDT

Thursday 23.00 to 01.30 EST/EDT

Asia/Pacific Training

Monday 10.00 to 12.30 GMT/BST

If you would prefer a training session at a different time, email the trainers at wbtainers@ient.com.

Squadrons

The pilot who flies alone frequently dies alone, and having squad mates to keep an eye on your six, is an invaluable help.

There are over 200 squadrons in *WarBirds*, ranging from serious historically based squads, to the fly-for-fun brigades.

Flying in a squad, or at least in squad-sized groups gives you a better chance of surviving when flying online. You may be invited to join a squad, or you can browse through the Squad List, at <http://www.ient.com/warbirds/squadrons.html> and click the links there to visit individual squad Web sites.

Home
Top Fighters
Top Bombers
Top Fighter Squads
Top Bomber Squads
Pilot Stats
Squad Stats
Create a Squad
Join a Squad
Maintain Your Squad
Email Your Squad
Find a Squad
Login
Logout

Squad Web Site Menu

Most squads have regular squad nights where they fly together in one of the arenas. You are bound to make some life long friends (and enemies!).

To view hcrana's Squad Night Register, go to <http://www.menacingferrets.com/squadnight.html>.

Squad Maintenance Pages

Squads are created, joined and maintained through the Squad Maintenance Pages at <http://www.ient.com/warbirds/squad/>. Login using your WarBirds Login ID and Password. If you close the page, these will be remembered as cookies. If you Logout, the cookies are cleared, and you'll need to Login again when you next access the page.

Creating a Squad

1. Select the Squad/Score Selection tab.
2. Click *Launch Web site* (make sure you are connected to the Internet).
3. Click *Create a Squad* from the Squad page menu.
4. Enter a Squad Name, Motto, and your email address.
5. Click *Create*.

Your squad is created but will not become active until at least one other person joins it.

Accept any requests to join your squad by clicking *Maintain Your Squad*.

Joining a Squad

1. Select the Squad/Score Selection tab.
2. Click *Launch Web site* (make sure you are connected to the Internet).
3. Click *Join a Squad* from the Squad page menu.
4. Enter the name of the squad. If you do not know the exact name of the squad, fill in the Search for Squad section further down the page, using either part of the squad name, or a member's callsign to search.
5. Type in your email address and any particular reason you wish to join.
6. Click *Submit Request*.

Maintaining your Squad

1. Select the Squad/Score Selection tab.
2. Click *Launch Web site* (make sure you are connected to the Internet).
3. Click *Maintain your Squad* from the Squad page menu.
4. Make changes to the Squad details, such as your contact email address, name and motto, as preferred.
5. Highlight a squadron member in the list, and *Promote*, *Demote* or *Remove* from the Squad, as preferred.

Emailing your Squad

1. Select the Squad/Score Selection tab.
2. Click *Launch Web site* (make sure you are connected to the Internet).
3. Click *Email your Squad* from the Squad page menu.
4. Type text in the box, and then select *Send*. The email is sent out to all the Squad members.

Find a Squad

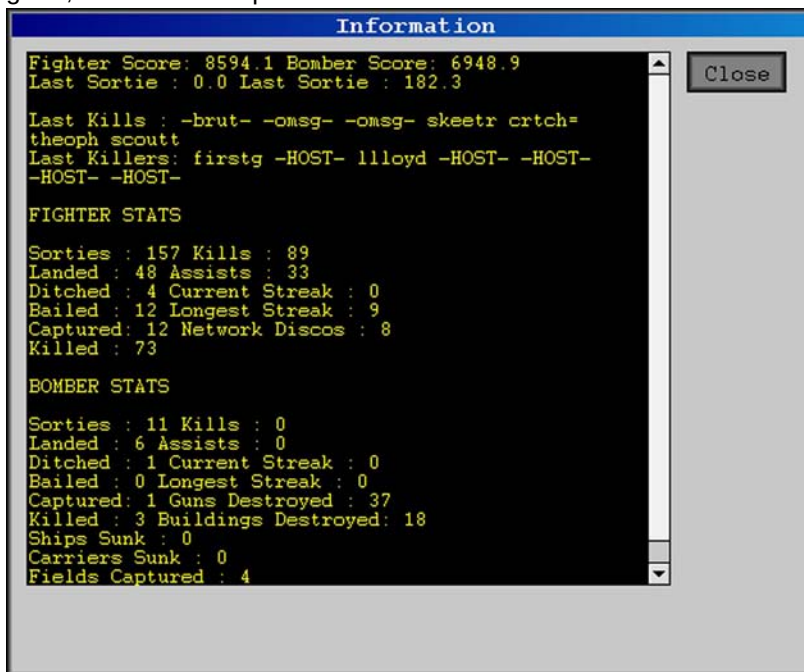
1. Select the Squad/Score Selection tab.
2. Click *Launch Web site* (make sure you are connected to the Internet).

3. Click *Find a Squad* from the Squad page menu.
4. Select whether to search by Member or Partial Squad Name.
5. Type the player's callsign, or part of a squad name in the field (such as 101), and click *Find*.

Scoring

Scores are updated daily at 08.00 eastern time, and the Web site lists the top 100 fighter, bomber and squadron scores for the Main arena. At the end of a three week Tour of Duty, all the scores are reset.

Each arena keeps track of scores for that arena, with the top 10 fighter, bomber and squad stats available from within the arena.



Pilot Statistics Window

Checking your Score

In an Arena

1. Select *Go Online* from the Main menu, enter your Login ID and Password, then click *Get Arenas*.
2. Select an Arena from the menu, and click *Log In*.
3. Select the Squad/Score selection tab.
4. Enter your callsign into the Pilot/Handle field.
5. Select *Check pilot scores* from the drop-down menu. The Information window pops up with your statistics.

On the Web Site

1. Go to <http://www.ient.com/warbirds/squad/>.
2. Select Pilot Stats from the side menu.
3. Enter your callsign in the Search for Pilot field and click *Find*.

To check the score of any other pilot, enter their callsign in the appropriate field.

Checking the Bomber and Fighter Rankings

In an Arena

1. Select *Play Online* from the Main menu, enter your Login ID and Password, then click *Get Arenas*.
2. Select an Arena from the menu, and click *Log In*.
3. Select the Squad/Score selection tab.
4. Select one of the following options from the drop-down menu:
 - Show Fighter Rankings—list the top 10 fighter pilots.
 - Show Bomber Rankings—list the top 10 bomber pilots
5. The Information window pops up with the statistics.

On the Web Site

1. Go to <http://www.ient.com/warbirds/squad/>.
2. Select one of the following from the side menu:
 - *Top Fighters*—list the top 100 fighter pilots
 - *Top Bombers*—list the top 100 bomber pilots.
 - *Top Fighter Squads*—list the top 100 fighter squads.
 - *Top Bomber Squads*—list the top 100 bomber squads.
3. The top scorers are listed on the Web page.

Checking Squad Scores

1. Go to <http://www.ient.com/warbirds/squad/>.
2. Select Squad Stats from the side menu.
3. Enter the name of the squad. If you do not know the exact name of the squad, fill in the Search for Squad section further down the page, using either part of the squad name, or a member's callsign to search.

Events

Regular scenarios and events are created and run by players, for players.

The Events page at <http://www.ient.com/warbirds/events.html> lists all the events for the current month, with links to the organiser's Web site.

European Micro Campaigns (EMC)

Wednesdays 20.00 BST/GMT

The EMC ties together a string of loosely scripted scenarios into a campaign, or miniature war, and is aimed at providing weekly meta-historical missions at Euro-friendly times.

The format is sufficiently regulated to ensure enemy contact (read: fun) and sufficiently loose to allow for surprise and stratagems.

Apart from the reduced icon settings posing a slight challenge, the EMC format gives rookie pilots a chance to do battle under less chaotic circumstances than in the Main Arena. Because enemy plane types are usually limited and known in advance, the pilot can fight to the best of his own aircraft's capability—without having to worry about all and sundry barrelling in from any direction. However, the likelihood of intense action and devastating surprise is as high, if not higher, in the EMC. Also, since sorties are generally made in strength, pilots seldom have to face the enemy alone. At least until the shooting starts!

The EMC endeavour to emulate air combat history, not necessarily recreate specific actions. While certain missions might be stipulated in the writeup, it is up to the participants to immerse themselves in the mind set of a particular campaign.

For more information visit their Web site at <http://ienevents.com/emchq/>.

Scenario Lites (SL)

Sundays 15.00 EST/EDT (RM)

Wednesdays 21.00 EST/EDT (RM/RR)

Fridays 22.00 EST/EDT (RM)

The Scenario Lites are run three times a week for the Real Mode (RM) and Relaxed Realism (RR) pilots.

Each day is independent of the others and is a two sided historically based event where players get one life to give for their country.

For more information visit their Web site at <http://ienevents.com/sl/> and be sure to read the SL How-to Guide.

Squad Select Series (S3)

Sundays 19.30 EST/EDT (when in session)

The Squad Select Series is a player organized event that simulates the large-scale battles fought between opposing Air Forces during The Second World War. Awards and cumulative scoring allow each player to track their career and squad exploits over many events.

Events are multi-frame campaigns that promote historical flying and plane match-ups. Sides are not always even nor have comparable aircraft, it is often luck and determined flying that wins the day.

If you do not belong to a Squad or your own Squad is not registered to fly in S3s, there are usually plenty of other squads that will adopt players for an event.

For more information, visit their Web site at <http://www.s3events.com/>

Target for Tonight

Thursdays 21.00 to midnight EST/EDT

"Target for Tonight" is an ongoing Historical Arena event which simulates a long-term historical battle. It is open to everyone with a War-Birds account. You do not have to register, you do not have to be in a squad, you do not have to be on time. You can show up when you want, fly or drive whatever vehicle you want, for whichever side you want, and perform any mission that appeals to you. The Historical Arena provides the setting and some goals—the rest is up to you.

Sometime prior to each event, a list of tactical or strategic goals for the event will be issued by the CM staff of the Historical Arena, consistent with the terrain and timeline then being simulated. For events which are continued from the previous week, the tactical and strategic goals will be determined based upon the previous week's results.

For more information visit their Web site at <http://www.rhino-bytes.com/ha/>.

Customizing WarBirds III

WarBirds III allows players to use customised Aircraft skins, sounds and gunsights. The Player Development Corps (PDC) has developed plane skin packs for online use. They are downloadable from FurBall at <http://www.furball.warbirdsiii.com/downloads/pdc.html>.

Loading Customized Aircraft Skins

The templates for creating your own aircraft skins are available from the xaero's WarBirds site on FurBall at <http://furball.warbirdsiii.com/xaero/>

The site also contains many customized skins to view.

You need to have two or three files for each skin:

- wing.tga
- fuse.tga
- extra.tga (when applicable).

1. Create the folder for your customized skin with the following structure:

WarBirds III\skins\[PLANE ID]\offline\[xxxxxxx]

The WarBirds III and skins folder are already present.

Create the PLANE ID folder using the list over the page for reference. For the P51-D, this would be p51, for the Bf109-E4, this would be bf109e.

Next, create the offline folder, and finally a folder xxxxxxxx with the name of your choice. There can be multiple folders inside the offline folder, and you are able to select any of the skins you have stored them.

2. Copy the wing.tga, fuse.tga and extra.tga (if applicable) files into the xxxxxxxx folder.
3. Launch WarBirds III. Select the plane that you want to customize. Open the Radio bar and type .planeskin xxxxxxxx where xxxxxxxx is the name of the folder you created.
4. Type .planeskin into the Radio bar to return to the default artwork.

For Example:

1. You have two skins for the Bf109E, and you'd like to have both of them available when you fly offline. One was created by HotSeat, the other by YellowHammer.
2. Create **bf109\offline** folders inside the **WarBirds III\skins** folder. Then create new **yellow** and **hotseat** folders inside the offline folder. You now have two folders, **WarBirds III\skins\bf109\offline\hotseat** and **WarBirds III\skins\bf109\offline\yellow** ready for the artwork.
3. Copy HotSeat's wing.tga and fuse.tga into the hotseat folder, and YellowHammer's wing.tga, and fuse.tga into the yellow folder.
4. Launch WarBirds, and select the Bf109-E4.
5. Open the Radio bar and type .planeskin yellow. You now have YellowHammer's scheme on the Bf109-E. Similarly type .planeskin hotseat, to have HotSeat's scheme.
6. To return to the default, type .planeskin.

Plane IDs

The Plane IDs are not case specific:

109GR6	A36	B17	B24D	B24J	B25C	BF109E	BF109F
BF109G	BF109K	BF110G	DEST1	F4F3	F4F4	F4U1	F4U4
F6F5	FM2	FW1904	FW1908	FW190D	HURRI1	HURRI2	JU52
JU87D	JU87G	JU88A	KAGA	KI43	KI84	M16	M3
M5	ME262	MKIV	MKIVD	MKV	P38	P38F	P38L
P40B	P51	P51B	SEAF2	SPIT1	SPIT5	SPIT9	XXX
YAK3	YAK9D	ZERO	ZERO21	ZERO52			

Customizing Gun Sights & Gauges

Some pilots believe that mastering tricky deflection shots gives them an edge in combat, and customizing your gun sight can improve accuracy with this.

It also allows you to add range marks to your sight's horizontal bars. If you set those marks for, say, 200 yards, and you close on an enemy plane until its wingspan fills the distance between those marks on your sight, you know you are about 200 yards away. This is important in some special events, where enemy planes are displayed—for maximum realism—with limited range data on the screen. Some players also use this process to establish torpedo range marks on the outer edge of their screen, and use them as the default sighting device whenever they plan to fly a mission against enemy ships.

You can specify a custom sight for each type of aircraft you plan to fly, or change the default to what you want, otherwise, the game defaults to the standard cross hair reticule.

The gun sights and gauges in the 3D cockpits may be customized by placing substitute texture files into the skins folders as **gunsite.tga** and/or **gauges.tga**.

For example: To create a custom gunsite for your P38L, place the custom gunsite.tga in the **WarBirds III\skins\p38L** directory.

The default gun sight and gauges files are located in iEntertainment Network\WarBirds III\textures. Use these files as templates for your personalized versions.

- German gauges—GEGS.tga
- Japanese gauges—JAGS.tga
- Russian gauges—RSGS.tga
- USA gauges—USGS.tga
- All gunsites—GUNSITE.tga

Notes:

- gunsite.tga should be saved as uncompressed 32-bit RGB with the alpha channel containing the blending information for the corresponding colors in the RGB channels.
- gauges.tga file should be saved as uncompressed 24-bit RGB using the same layout as the country template (German, Japan, or US/Britain).

Customizing Sounds

All WarBirds III sounds are in the WarBirds III/Sounds subdirectory as .DLL files. Each plane has its own .DLL file that contains or points to the appropriate sounds for that plane's engine and guns. The other file in the directory is sounds.dll, and it contains the default engine and gun sounds and all the other sounds.

General Sounds

You can replace any of the default sounds by placing a 22k 8 bit mono .wav file in the sounds directory. The .wav file must be named appropriately for it to be read into the game. Here is a list of the sound names for each sound. They must have the .WAV extension.

EXP1	Explosion 1	EXP2	Explosion 2
EXP3	Explosion 3	BOMB	Bomb Release
ROCKET	Rocket Firing	GEAR	Gear Extending/ Retracting
PING	Hit Sound	PING2	Hit Sound 2
PING3	Hit Sound 3	STALL	Stall Horn
DEATH	Player plane explodes	BAIL	Bail out sound
SCREECH	Tire Screech	SCRAPE	Airframe Scraping on Ground
DAMAGE	Player plane has a part damaged	WIND	Wind
BAYOPEN	Bomb Bay doors opening/ closing	TURRENT	Turret sound for gun- ners(programmer spell- ing)
FLAK1	Flak explosion	FLAK2	Flak explosion 2
FLAK3	Flak explosion 3	START	Engine start sound(used in intro screen only)
FLAPS	Flaps extending/retracting	GEXCEED	Airframe under high G load and landing gear overspeeding
OVRSPD	Airframe buffeting	INLINE1	Engine sound
INLINE2	Engine sound	INLINE3	Engine sound
RADIAL1	Engine sound	RADIAL2	Engine sound

RADIAL3	Engine sound	JETENG	Engine sound
30CAL1	Gun sound	30CAL2	Gun sound
50CAL1	Gun sound	50CAL2	Gun sound
20MM1	Gun sound	20MM2	Gun sound
30MM	Gun sound	30MM2	Gun sound

For Examlpt: To replace the bomb release sound with a whistling bomb sound. Create or copy a 22k 8 bit mono .wav and place it in the WarBirds III\sounds directory and rename it to bomb.wav.

Plane Sounds

To create your own custom sounds for a specific plane, create a subdirectory in your sounds directory with the same name as the plane's .dll file. In that subdirectory, place your .wav files with the following names:

ENGINE.WAV	Engine sound
GUN.WAV	Primary guns
CANNON.WAV	Secondary guns
ORD.WAV	Heavy cannon(P39 and B25H)

For Example: To replace the engine sound of the Fw 190A-8. Create a subdirectory in the sounds directy called FW1908 (The appropriate subdirectory name is the .dll name in the sounds directory) and copy the replacement sound files into that directory.

NOTE: Using large sound files may cause a decrease in your computer's performance when running WarBirds III.

Dot “.” Commands

All host commands are preceded by a “.” (period). Some host commands can be issued in flight via the radio, others can only be issued when on the ground, in the Control Tower.

If the radio entry bar is not visible at the bottom of the screen, press / once to activate it before issuing a host command.

<code>.aiattach <ai host> <drone #> <pos #></code>	Attach as a gunner to drone # under the command of ai host in position number # (1 to 7).
<code>.ailist</code>	Gives list of ai hosts and drones which can join as a gunner using the <code>.aiattach</code> command.
<code>.arnaflags</code>	List all the arena flags (settings) for the arena.
<code>.barrage</code>	Order the artillery to fire a barrage at the last spotting round position.
<code>.bglodrenderrange <x></code>	Sets the level of detail.
<code>.bgminrenderrange <x></code>	Sets the minimum range in yards at which objects are rendered.
<code>.clear</code>	Resets your score.
<code>.conv <xxx></code>	Sets gun convergence distance where xxx is 1 to 999.
<code>.correct <xxx> <yyy></code>	Orders the artillery to adjust their spot firing round by xxx degrees from north, and by yyy yards.

.country <x>	Tune Radio 1 to country x where x is 1 (red), 2 (green), 3 (gold) or 4 (purple).
.cpu	Reports the processor codepath in use.
.date <xx> <yy> <zzzz>	Set the date to month (xx), day (yy) and year (zzzz), where xx is 1 to 12, yy is 1 to 31 and zzzz is 1900 to 2999
.delay <xxx>	Sets the delay in milliseconds between each bomb in the salvo where xxx is 50 to 1000.
.destroyall	Destroy all objects (except the tower) to begin the takeover of a field quickly during testing.
.detroyob <x>	Destroys a single object given the object number x.
.e	Exit plane (must be on ground and stopped when online).
.ez	Enable easy mode.
.field -1	Start flight in the air.
.field <x>	Start at field x where x is the field number.
.fields	Shows a listing of the available fields, their current ownership and status.
.flightstart <x> <y> <alt>	Start flight at designated coordinates and altitude.
.flushplanes	Unloads and forces planeskins to reload (offline, in Tower only).
.fly	To the runway.
.framemode <x>	Enables the graphical representation of the framerate when x is 2, returns to normal when x is 1.
.fuel <xxx>	Sets fuel level for your plane. Replace xxx with percentage of load preferred.
.gamma <x.x>	Adjust the gamma level, where x.x is 0.0 to 2.0.
.grndlabels	Display the ID of ground objects.

.handle <xxxx>	Change your handle to xxxx where xxxx can be up to 20 characters long.
.hl xxxxxx	Player xxxxxx's icon is colored white. This can only be done to friendlies.
.hls	All members of your squad have their icons colored white, as long as they are flying for the same country.
.hurtme <xxx>	Destroys the selected part (list below).
.ignore	List all ignored players.
.ignore <xxxxxx>	Stop receiving messages from player xxxxxx. Up to 32 players can be ignored this way.
.invulnerable	Make aircraft invulnerable to weapon hits.
.listen all	Start receiving messages from all ignored players.
.listen <xxxxxx>	Start receiving messages from ignored player xxxxxx.
.lodrender	Sets the level of detail.
.masterview	Slave an observer's view to your own.
.minrender <x>	Sets the level of detail.
.offtime	Set the time offline.
.pitchladder <x>	Displays the pitchladder when x is 1, doesn't when x is 0.
.privatearena <password>	Allows the user to enter a private arena, when they enter the correct password.
.radio	Display currently tuned channels.
.radio <x> <yyy>	Tunes Radio x to channel yyy.
radiolines <x>	The number of radio buffer lines displayed where x is 1 to 64.
radiowidth <xxx>	Sets the radio width to xxx pixels where x is 220 to screen resolution minus 32. Default is 440.

.rank	Displays the top 100 pilots.
.ros	Shows the roster of players currently online.
.rudderreapeat <x>	Toggles rudder keys repeating on being held down or needing multiple key presses, where x=1 (repeating) or 0 (single strokes).
.runway <x>	Select runway where x is -1 to n. -1 is an air start when offline, and n depends on the number of entry points at a given airfield.
.salvo <xx>	Sets number of bombs to drop with each key press when in "pickle" mode.
.score <xxxxxx>	Shows a player's score. Replace xxxxxx with the player's callsign or leave blank to view your own.
.setautologin <x>	Toggles auto login where x is 0 or 1.
.setsavepass <x>	Toggles saving password where x is 0 or 1.
.shanghai	Steal another player and set them as observer in your cockpit.
.slewfeet <x>	Sets the number of feet to slew per frame (for slew mode—modified by throttle).
.slip <x>	Toggles the slip indicator above the gun sight where x is 0 or 1.
.smoke	Activate the "airshow" smoke.
.speed <xxx>	Sets the autotrim to speed xxx mph
.spot	Orders an artillery round to be fired D2 ahead of your position.
.terrain <x>	Change the offline terrain to terrain x, where x is the name of the terrain.
.trimrepeat <x>	Toggles trim keys repeating on being held down or needing multiple key presses, where x=1 (repeating) or 0 (single strokes).
.unlimitedammo	No limit to ammo (works with bombs and rockets).

- .varlevel <x>** Change the number of polygons rendered for the terrain where x is 250 to 50,000
- .wbuffer <x>** Toggles the w-buffer where x is 0 or 1.

Damageable Parts List for use with **.hurtme**

Eng1	Elev	Centfuel	Rightgun
Eng2	Hstab	Rearfuse	Topgun
Eng3	Rudder	Centfuse	Bottomgun
Eng4	Vstab	Pilotarm	Leftwing
Hydeng1	Lailaron	Pilot	Rightwing
Hydeng2	Railaron	Tailgun	Rightgear
Hydeng3	Leftfuel	Nosegun	Leftgear
Hydeng4	Rightfuel	Leftgun	Flaps

Offline AI Dot Commands

`.offairattack` Sets offline game to air attack (AI planes).

`.offfreeflight` Sets offline game to free flight

`.offbomberambush` Sets offline game to bomber mission

Air Attack Mission

`.offrps show all` Display all the available AI-controlled aircraft.

`.offrps add <model>` Adds <model> to the user-selected list of AI-controlled aircraft. Once the user has created this list, the AI-controlled aircraft are chosen from it.

`.offrps show selected` Displays the current user-selected list of AI-controlled aircraft.

`.offrps random` Returns to the normal, randomly-selected AI-controlled aircraft.

`.offrps nme <x>` Sets number of enemy aircraft where $x = 0$ to 4. Specifying 0 returns to random numbers of friendly and enemy.

Bomber Ambush Mission

`.offbombers <x>` Sets the number of AI-controlled bombers, where $x = 1$ to 8.

`.offbombermodel show` Displays the available AI-controlled bomber models.

`.offbombermodel <model>` Specifies the AI-controlled bomber model, instead of a random selection.

`.offbombermodel random` Returns to a random selection of AI-controlled bomber models.

`.offbombermodel ground` Toggles the selection of ground vehicles instead of aircraft in the mission.

Keyboard Commands

Keyboard commands and Joystick controls can be customized using the Input Mapper screen (see [page 24](#)).

Aircraft Controls

Center Joystick	F12
Left Rudder	A
Right Rudder	D
Center Rudder	S
Gear Up/Down	G
Wheel Brakes	Spacebar
Dive Brakes (if applicable)	Spacebar
Flaps Down 1 Notch	Q
Flaps Full Down	Shift + Q
Flaps Up 1 Notch	W
Flaps Full Up	Shift + W
Autotrim Level	X
Autotrim Speed	Shift + X
Autotrim Angle	Ctrl + X
Elevator Trim Up	K
Elevator Trim Down	I
Rudder Trim Left	J
Rudder Trim Right	L
Aileron Trim Right	,
Aileron Trim Left	M
Clear Trims	G

Aircraft Controls (continued)

Eject	Enter Enter Enter (quickly)
Bail Out	Ctrl + B
Open Chute (after bailing)	Enter
Exit Plane (on runway and online)	Ctrl + B
Toggle Mouse Control	Alt + M

Radio Keys

Radio 1	/
Radio 2	Shift + /
Radio 3	Ctrl + /
Radio 4	Alt + /
Expand/Shrink text window	Tab
Send Check 6 call	Right-click

Engine Controls

Start/Kill Engine 1	E
Select & Start all Engines	Shift + E
Throttle Up 5 Percent	=
Throttle Down 5 Percent	-
Full Throttle	0 (zero)
Engine Idle	1
War Emergency Power (WEP)	F9
Next Fuel Tank	.

Bombing Keys

Open/Close Bomb Bay	O
Drop Bombs	B
Salvo Toggle (Pickle mode)	Ctrl + P
Jump to Bombardier position	Y
Change to Bombsight when in Bombardier position	Numpad 2
Bombsight Increase Magnification	[
Bombsight Decrease Magnification	]

View Keys

Forward	Numpad 8
Left	Numpad 4
Right	Numpad 6
Back	Numpad 2
Up	Numpad 5
Forward/Right	Numpad 9 or 8 + 6
Forward/Left	Numpad 7 or 8 + 4
Forward/Up	Numpad 8 + 5
Right/Up	Numpad 6 + 5
Left/Up	Numpad 4 + 5
Right/Rear	Numpad 3 or 6 + 2
Left/Rear	Numpad 1 or 4 + 2
Rear/Up	Numpad 5 + 2
Autopan Left	Ctrl + Numpad 4
Autopan Up	Ctrl + Numpad 5
Autopan Right	Ctrl + Numpad 6
Change view type	Shift + O
View Badguy toggle	Shift + 8
Select next Badguy	Shift + 9
Overlay Map Toggle	F1
Map Zoom In	Shift + [
Map Zoom Out	Shift +]
External View Toggle (when allowed)	Ctrl + E
External View Zoom Out	]
External View Zoom In	[
Move around in external view	Numpad arrow keys
Zoom Out (Field of View bigger)	V
Zoom In (Field of View smaller)	Z
Default Field of View	Ctrl + V or Z
Change Cockpit Head position	\
Cockpit lean (for Carrier landings)	U
Track View (chase cam)	Alt + V
Snap to Instrument view	F11
Snap to Gunsight view	F4
Toggle Sticky snap	Shift + P
Icon Toggle	F2

Ground Vehicle Keys

Change up a Gear	;
Change down a Gear	Shift + ;
Cycle through different views	\
Adjust MKIV sight by 500 yards	Q & W
Jump to Driver position	1
Jump to Gunner position	2
Finely adjust aim of main turrets	2, 3, 4, 5, & 6

Gunnery Keys

Fire Guns	F
Fire Secondary Gun	B
Select Secondary weapon	Backspace
Jump to Observer position	Space
Jump to Pilot position	1
Jump to Tail Gun position	2
Jump to Nose Gun position	3
Jump to Left Gun position	4
Jump to Right Gun position	5
Jump to Top Gun position	6
Jump to Bottom Gun position	7
Toggle Otto (automatic gunner)	Ctrl + T
Toggle Gunner Maintenance screen	Ctrl + G

Interface Keys

Toggle Clouds	Alt + K
Toggle Horizon Texture	Alt + H
Toggle Aircraft Debris	Alt + N
Toggle Cockpit	Ctrl + C
Toggle HUD (red text)	Ctrl + H
Toggle Ocean	Ctrl + O
Toggle Slew mode (offline only)	Ctrl + S
Toggle Detail	Ctrl + V
Take Screenshot	Alt + S
Take Screenshot (Mac only)	Cmd + Shift + 3
Select Stick Set 1	F5
Select Stick Set 2	F6
Select Stick Set 3	F7
Select Stick Set 4	F8

Appendix A: Cockpit Controls

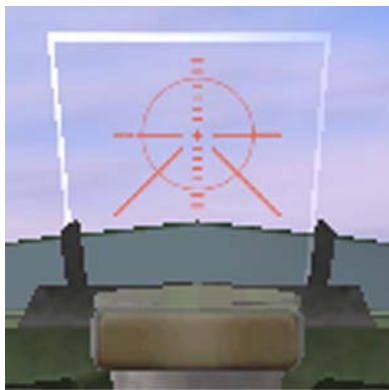
There are several aircraft available in *WarBirds III*, each of which has a unique cockpit layout. The same instruments are present in each cockpit, with a few exceptions.



Spitfire 3D Cockpit

When trying out a new aircraft for the first time, try performing various maneuvers and observe which instrument changes. For example, you can engage the flaps by pressing **Q** before you even fire up the engines. Finding the gear indicator by pressing **G** while still on the ground is not to be recommended, however, as it generally damages the aircraft when it collapses to the runway.

The units used on the altimeter depend on the aircraft. An aircraft of German manufacture has metric units whereas one of English manufacture has imperial units.



Gun Sight

The color of the gun sight cross hairs indicates your country allegiance.

It is a standard fixed gun sight, without any computing abilities. The center of the sight represents the theoretical line that your gun rounds pass through when your aircraft is under a 1 G load at the convergence range you have selected.



Fuel Gauge

The fuel gauge indicates the percentage of fuel remaining, with F being 100 percent and E being 0 percent. When fuel reaches a critically low level, a red low fuel light illuminates.

The amount of fuel you have at the start of a flight is selected in the Plane screen, see [page 106](#).



Flaps & Gear Indicator

Flaps: The indicator for the flaps varies considerably between aircraft. It can be a lever, a dial or a ladder gauge.



Gear Indicator: The gear indicator indicates when the gear is down. Flying with the gear down causes a lot of drag and is detrimental to the maneuverability of the aircraft.



Altimeter

The altimeter displays the altitude above mean sea level (not the height above the ground). The small hand indicates thousands of units, the long hand hundreds of units, the red mark tens of thousands of units.



Accelerometer

The accelerometer measures the G-Force on the plane. In normal straight and level flight 1 G is the normal force of gravity. When doing a 5 G turn the plane and pilot experience 5 times the force of gravity—a 200 lb man would seem to weigh 1000 lbs.

NOTE: Most WWII aircraft were not fitted the G-meters. They are included here to compensate for the lack of physical feedback.



Vertical Speed Indicator

The vertical speed indicator displays the current rate of climb or descent. The units are either in thousands of feet per minute or in kilometers per minute, depending on the aircraft.



Artificial Horizon & Slip Indicator

Artificial Horizon: The artificial horizon is an instrument used to determine aircraft attitude, particularly in low visibility conditions. The moving line indicates the horizon, and the fixed line represents the aircraft.

The tick marks along the top indicate the bank angle. Each represents 30 degrees of bank.



Slip Indicator: The slot and ball at the bottom is the slip indicator. This shows whether the craft is in coordinated flight or not. When an aircraft is coordinated, the nose is aligned with the aircraft flight path. When the aircraft is outside the turn (on the opposite side from the direction of the turn), the aircraft is said to be in a skid. When the ball is inside the turn, the plane is said to be in a slip. In either case, the plane may be brought into coordinated flight by “stepping on the ball,” that is applying rudder in the direction of the ball until it is centered again. In general, an aircraft turns most efficiently when it is in coordinated flight, but there are tactical reasons why a pilot may want to fly uncoordinated.



Compass

This is a tape style of compass. The cardinal directions are indicated with the appropriate letter. The large tick marks indicate tens of degrees and the small ones five degrees. Every 30 degrees is indicated by a number (3 is 30 degrees, 6 is 60 degrees, and so on).

Indicator Lights

There are three indicators present on every aircraft.



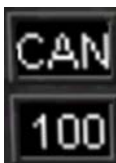
Auto: When the autopilot is engaged this light is lit (see [page 28](#)).



Brake: The wheel brakes are engaged to slow down the aircraft after landing, and are activated by holding down the **Spacebar**. When lit the brakes are engaged.



Bomb Bay Light: Aircraft with a bomb bay usually have a light in the cockpit to indicate the position of the doors. Green is doors open, red or unlit is doors closed.



Ordnance & Gun Counter

The ordnance counter indicates the ammunition for the secondary weapons on the aircraft. Press **Backspace** to change the selected weapon. For machine guns and cannons smaller than 37 mm, the counter indicates the percentage of rounds remaining.

The gun counter displays the number of bursts available for the primary guns only. When an aircraft has automatic gunners ("Otto"), each position displays its own gun counter.



Air Speed Indicator

The airspeed indicator displays the aircraft's indicated airspeed. The indicated airspeed is not the same as true airspeed, as the indicated airspeed for the same true airspeed reduces with altitude.



Tachometer

The tachometer reflects the power setting of the engines. Idle indicates the engine is at flight idle, and 100 indicates 100 percent of power is selected. Most aircraft can exceed 100 percent power by using War Emergency Power (WEP). The effectiveness of WEP varies from aircraft to aircraft, and between altitudes. Each has a limited supply of WEP and use of WEP tends to overheat the engine. The engine cools more efficiently when overheated if the throttle is set below the yellow line.



Engine Oil & Temperature Gauges

The oil and temperature gauges indicate how healthy your aircraft's engines are feeling.

Oil Pressure: The oil lubricates and cools the engine. If the engine is damaged by enemy fire, or if you fly in a negative G state for too long, the temperature rises until the engine seizes and stops. If the oil pressure drops due to negative Gs, return to a positive G to restore pressure.

Temperature: When overheated, a red warning lamp illuminates to warn of the dangerous condition. The engine should cool at its most efficient rate when the throttle is set below the yellow line.

Appendix B: Selection Screens

This is where plane types and armaments can be studied, the takeoff field chosen, scores checked and groups joined together to form squadrons to go enemy hunting en masse, or even to organize a crusade to capture enemy airfields.

When playing offline only four screens—*Plane*, *Field*, *Squad/Score* and *Offline Game*—are available.

Plane Selection

The Plane screen is where you select the vehicle and loadout for your next flight. Select the *Plane* tab to display the Plane Selection screen.



Plane Selection Screen

Vehicle: Click *Fighter* to view the Fighter list, *Bomber* for the Bombers, and *Other* for the ground vehicles. Open the drop-down menu and scroll up and down using the cursor, and then click to select an aircraft or ground vehicle.

Load Out: Use the drop-down menu to view the load out options, and select the one you want. An aircraft flies faster and is more maneuverable without the drag of bombs under its wings.

Flight Mode: Select Easy or Full Realism flight mode. Easy flight mode makes the plane easier to control and minimizes the differences between the handling characteristics of certain planes. Full Realism takes a while to master, with the plane reacting as it would in real life. Easy flight is not enabled in all the arenas.

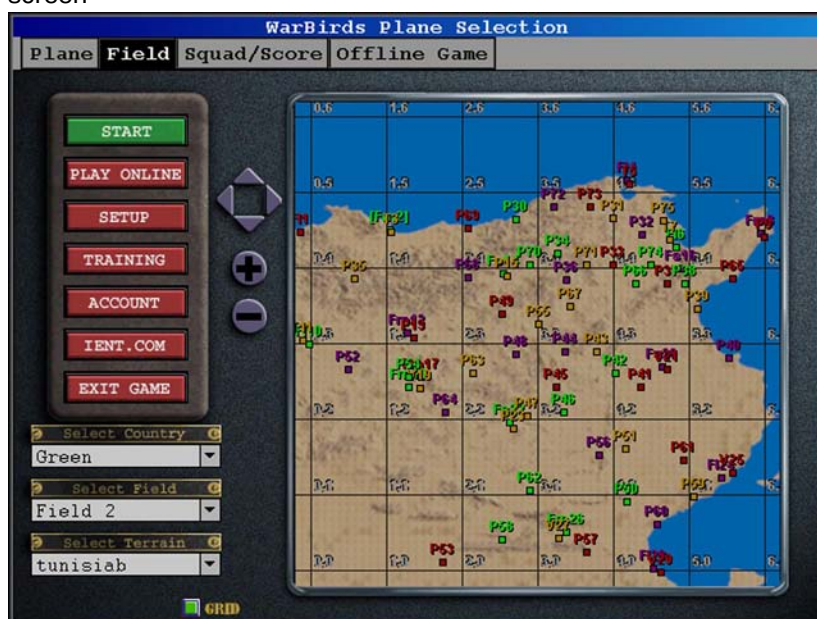
Can conv: Enter the convergence distance for your cannon. Convergence is the range at which your cannon converge, and the default is 300 yards.

MG conv: Enter the convergence distance for you machine guns. The actual range of a typical aircraft machine gun is 1,000 yards, but it is extremely unlikely that you will hit a small, elusive target that far away. Somewhere between 150 and 400 yards is a more realistic range to engage an enemy.

Fuel: Enter the percentage of fuel to be loaded. It is not necessary to have a full tank of fuel. A good load is between 35 and 40 percent as the aircraft handles better when lighter.

Field Selection

The Field screen is where you select the country and starting airfield for your flight. Select the *Field* tab to display the Field Selection screen



Field Selection Screen

Select Country: There are up to four countries to fight for, each represented by a different color. Not all countries are available in all arenas.

Select a Country color from the drop-down menu, Red, Green, Gold, or Purple.

If you forget which country you are while in flight, look at the gun sight—the cross hairs are the color of your country.

Select Field: Select your country and terrain, then either click on the map, on a field of the same color as your country, or select a field from the drop-down menu. Your location is indicated by parentheses around the field number, **[F5]**, for example.

Terrain: Select a terrain from the drop-down menu. Additional terrains can be downloaded from the WarBirds III Web site at <http://www.ient.com/warbirds/downloads.html>. In the online arenas the terrain is set to each arena.

Grid: Click in the box to toggle the grid on and off.

Map: Zoom in and out of the map by using the **]** and **[** keys, pan using the arrow keys. Or click on the Plus, Minus and arrow buttons on the screen.

Toggle the floating map by using **F1**.

Select a field or carrier by clicking on it. Join an AI drone (Carrier or Ground Vehicle) by right-clicking on it.

NOTE: Once a plane and field have been selected you are ready to fly. Select *Start* to go to the runway.

Gunner

The Gunner screen is where players request to join as Gunners. Select the *Gunner* tab to display the Gunner screen.

The pilot and all gunners and observers must be at the same airfield to join and fly together. Any plane can have another player joining as an observer, but only the bombers with gunner positions can have players join as gunners.



Gunner Screen

- Eligible Pilots:** Select one of the AI generals, or a player from the drop-down menu. Only those in the same room as you are listed, and are therefore eligible for you to join as a gunner or observer.
- Drones:** When you have selected one of the AI generals, you have the option of joining any of the vehicles under their command. Select one from the drop-down list.
- Positions:** Select one of the gunner positions or Observer. This is the position you are requesting to occupy. Any positions already occupied have the player's callsign listed.
- NOTE:** Not all bombers have all positions available.

Squad/Score Screen

The Squad/Scores screen lets you view any player's score, ranking and any medals that have been awarded within an arena, and gives access to the online Squad Website.

Select the Squad/Score tab to display the Scores screen.



Squad/Score Screen

There are several Commands available in the Select Score Type drop-down list.

NOTE: You must be online and in an arena to access the statistics for that arena using this window.

Check Pilot Scores: You can view your own, or any other pilot's score, as long as you know their callsign. Enter a callsign in the Pilot field, and then select *Check pilot scores*.

A detailed list of the pilot's statistics is displayed.

Check Pilot Medals: View a list of the medals you have been awarded. To view another pilot's medals, enter their callsign and then select *Check pilot medals*. Clicking on a medal displays details regarding the dates that the medal has been awarded—medals are awarded multiple times.

Show Fighter Rankings: View the top one hundred fighter pilots and their statistics.

Show Bomber Rankings: View the top one hundred bomber pilots and their statistics.

Show Milestones: Medals are awarded when a pilot has achieved particular goals.

Show Bomber Milestones: Each bomber medal is awarded when a pilot has achieved particular goals.

Set Your Handle: The handle of a pilot is initially their 6 digit callsign followed by "set your handle", but this can be changed to a name up to 20 characters in length. Enter a handle in the Pilot/Handle field, and then select *Set your handle*.

Launch Squad Website

The Squad Web site lists all the stats for the previous Tour of Duty, and is where Squads are created and maintained. Go to <http://www.ient.com/warbirds/squad/> or click on the Launch Squad Website button to access theses pages.

Enter your WarBirds Login ID and password to Login.

Home: Click to go to the WarBirds III Web site.

Top Fighters: View the list of the top 100 fighter pilots for the last tour of duty.

Top Bombers: View the list of the top 100 bomber pilots for the last tour of duty.

Top Fighter Squads: View the list of the top 100 fighter squads for the last tour of duty.

Top Bomber Squads: View the list of the top 100 bomber squads for the last tour of duty.

Pilot Stats: View your stats, or any other pilot's by entering their callsign in the *Search for Pilot* field and clicking *Find*.

Squad Stats: View any squad's stats by entering a Squad Name, and clicking *Find*.

Home
Top Fighters
Top Bombers
Top Fighter Squads
Top Bomber Squads
Pilot Stats
Squad Stats
Create a Squad
Join a Squad
Maintain Your Squad
Email Your Squad
Find a Squad
Login
Logout

Squad Web Site

Create a Squad: Enter a Squad Name, Motto and your contact email address to create a squad. If someone requests to join your squad, an email is sent to your contact email address, and you can accept or decline the request on the Maintain Your Squad page.

Join a Squad: Enter the name of the squad you want to join, your email address, and the reasons you want to join, and then click *Submit Request*. If you do not know the exact squad name, search for a squad by either entering a current member's callsign, or part of the name.

Maintain Your Squad: Amend your Squad details, such as the name and motto, and update your contact email address.

Email Your Squad: Type and then send an email to your entire Squad.

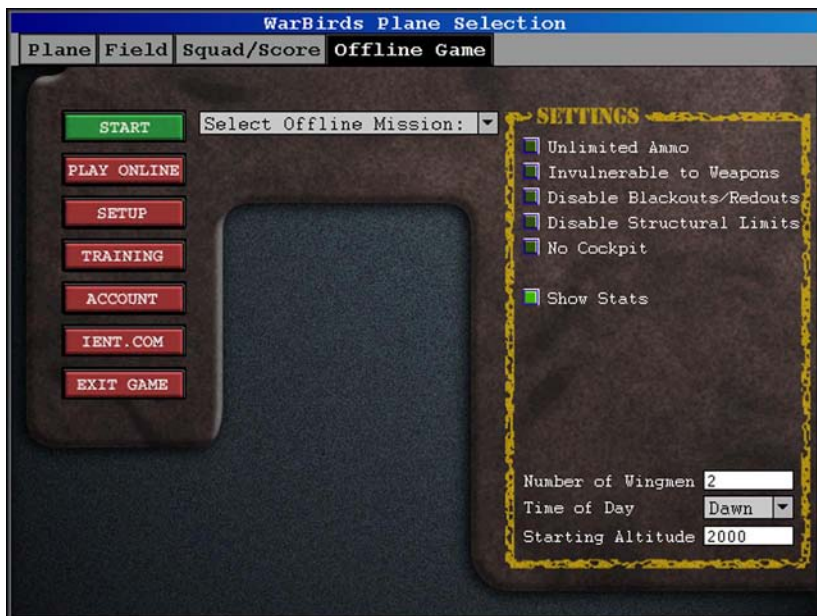
Find a Squad: Search for a Squad by either entering a member's six digit callsign, or by partial squad name.

Login: Enter your ID and password. These will be cookie'd if you do not logout.

Logout: Erase your cookies. This means you will need to re-enter your Login ID and password when you next access the site.

Offline Game Screen

There are several preset games available offline in *WarBirds III*. Select the Offline Game tab to display the Offline Game Selection screen.



Select Offline Mission: There are several pre-set off line missions to choose from:

- 1v1 Air Attack
- 2v2 Air Attack
- Air Attack
- Bomber Ambush
- Carrier Practice
- Free Flight
- Landing Final
- Malta Assault
- Sea Attack
- Target Drones
- Tunisia Assault
- Tunisia Invasion

Settings: Click to enable or disable the Offline Settings. When the button is lit that setting is enabled.

- *Unlimited Ammo*—If you find that you constantly run out of ammo while practicing, select this option to be able to continue shooting down drones until either you are shot down, crash, or run out of fuel.
- *Invulnerable to Weapons*—If you find you are being shot down before you have a chance to fire at the drones, select this option.
- *Disable Blackouts/Redouts*—Blackouts and redouts occur when you pull so many Gs that the blood supply to the brain is affected.
- *Disable Structural Limits*—Select to not have the plane break up when being pushed beyond its limits.
- *No Cockpit*—Select to have no cockpit displayed when flying.
- *Show Stats*—Select whether to have your stats displayed while flying.
- *Number of Wingmen*—Enter a number up to 3.
- *Time of Day*—Select the time of day from Dawn, Morning, Noon, Afternoon, Evening, Dusk and Night.
- *Starting Altitude*—Enter a starting altitude. 0 will start you on the runway.

Appendix C: Setup Screens

All the Setup screens have *Load Tab Defaults*, *Cancel* and *Okay*.

- *Load Tab Defaults* returns all settings on a screen to the default.
- *Cancel* returns to the previous settings.
- *Okay* saves the selections made and returns to the Selection screens.

Stick Screen

Changing the selections on the Stick screen customizes the response your plane makes to the movements it senses from your joystick.



Stick Screen

Controller Selection: The top part of the Stick screen lets you choose the joystick and movement (x-axis, y-axis, throttle, rudder) that controls a given movement or action (Roll, Pitch, Yaw, Throttle, Brakes).

- *Roll*—Roll is the circular movement of your wing tips around your fuselage, caused by the ailerons.
- *Pitch*—The up or down movement of the nose caused by the elevator.
- *Yaw*—The left and right sideways movement of your nose caused by the rudder.
- *Throttle*—The speed at which the engine revs, which changes the speed of the aircraft.
- *Brakes*—The brakes on the wheels.

Calibrating Controllers: The bottom part of the Stick screen contains sliding scalers. Each of the scalers represents a portion of joystick movement, and the slider settings control the response when the stick is moved that far through its range of travel.

Select an Axis:

- Roll
- Pitch
- Yaw
- Throttle
- Brakes

Then adjust the slider, as preferred.

If you have the 50 slider set at 50, moving the joystick half-way from center gives you 50 percent, or a total response of 25 percent because your plane's control surface moves 25 percent of its total movement. By setting the 90 slider to 100, you obtain a full 90 percent response when the stick is moved that far from center. You can enter numerical values for the slider tunings by typing a percentage value in the small field at the bottom of each slider

Deadband: The Deadband controls the amount of dead space (no feedback to or from the joystick) when its pitch, roll, and yaw controls are in neutral—when you are exerting no pressure on the stick on any axis. Some sticks are especially sensitive in their neutral positions, and others do not center as precisely as you might wish. Increasing the deadband along any bothersome axis may correct this.

Damper: The *Damper* setting takes any spikes in the joystick movement and averages them out, giving a smoother ride with joysticks that seem to overreact.

Center Joystick: Move the joystick around in circles to the extremes of the x and y axis, and then select Center joystick. Then turn or push the rudder to the full extent, and select Center Joystick. Finally, operate your throttle control.

Invert Axis: Click to invert the axis of the joystick.

NOTE: Always remember to press **F12** before taking off to center your joystick according to the settings you have made.

Flight Screen

The Flight screen lets you select your control settings, and offline mission options.



Flight Screen

General Settings

Show Pitch Ladder: Display the pitch ladder above the gun sight.

Show HUD: When checked, the HUD (heads up display) is displayed as red text when flying.

Show stick Set Messages: When checked, and when you are using multiple stick sets, swapping stick sets generates a message notifying you of the change.

Show Radio Bar Buttons: When checked, the Radio bar buttons are displayed.

Show Help Bar: When checked, the Help buttons are displayed.

Brake Settings

Initial Brake Power: Set the percentage of brake power that is used when the brakes are initially engaged.

Differential Brakes via: Select whether to have the differential brakes activated from the rudder or the joystick.

Mouse Click Settings

Select Left-click to:

- Tune Radio to Player
- Send Check Six message to Player

Right-click is automatically the one left-click is not.

Offline Settings

Unlimited Ammo: If you find that you constantly run out of ammo while practicing, select this option to be able to continue shooting down drones until either you are shot down, crash, or run out of fuel.

Invulnerable to Weapons: If you find you are being shot down before you have a chance to fire at the drones, select this option.

Disable Blackouts/Redouts: Blackouts and redouts occur when you pull so many Gs that the blood supply to the brain is affected.

Disable Structural Limits: Select to not have the plane break up when being pushed beyond its limits.

No Cockpit: Select to have no cockpit displayed when flying.

Offline Game Features: Select one of the offline missions for your practice session.

- *Free Flight*—An open arena with no enemies where you can practice flying different aircraft, driving ground vehicles or making a bombing run without the risk of getting into a dogfight.
- *Air Attack*—Enemy cons are coming in for the attack. Get off the runway and into the air without being shot! Or start at altitude and try to shoot down the cons.
- *Target Drones*—For some gentle dogfighting practice, try Target Drones. The enemy aircraft fly around just waiting for you to shoot them down—and they don't shoot back!
- *Bomber Ambush*—There is a flight of enemy bombers on their way to your airfield. Try to shoot them down before they drop their loads, but be wary as the gunners will shoot back at you.

AI Level: Select the ability of the enemy Ace, Veteran or Rookie.

Number of Enemies: Enter a number up to 4. 0 gives a random number.

Number of Wingmen: Enter a number up to 3.

Time of Day: Select the time of day from Dawn, Morning, Noon, Afternoon, Evening, Dusk and Night.

Starting Altitude: Enter the altitude at which your aircraft starts when you click *Fly*.

Sound Screen

The Sound screen allows you to vary the volume of individual sounds.



Sound Screen

The Sound screen allows you to vary the volume of individual sounds. For example, if the sound of your engine is too loud and drowns out everything else it can be turned down. Move a slider to the right to increase the volume and to the left to decrease it.

Colors Screen

The Colors screen allows you to change the color of icons displayed in the game, and to make the message box as transparent as you want it.



Colors Screen

Use the color sliders to change the shade of the icons displayed while flying.

The message box transparency can also be changed by moving the *Msg Box Transparency* slider

Video Screen

Factors which affect the appearance of the game are set here.



Video Screen

Var Level 250 to 50,000: This controls how many triangles should be assigned to rendering the terrain. Higher numbers look better, but may lower frame rate.

Texture size: This allows you to limit how much VRAM is used by restricting the size of the textures used. **No Limit** uses whatever size the original artwork is, the others set the maximum.

Ground Detail: The amount of detail seen on the ground objects. More slows the system down but the objects on the ground are more detailed and prettier.

Aircraft LOD Bias: Controls how far away the highest Level Of Detail (LOD) on the aircraft is active. Higher may lower frame rate.

Enable Environmental Maps: Turning this off removes the metallic reflection effects on some aircraft (P-51D for example). May improve frame rate on some systems to turn it off.

Font Size: Changes size of type in the radio bar and GUI

Texture Terrain Quality: The quality of the appearance of the terrain. Higher slows the sytem down, but is prettier.

Clutter Distance: This is the maximum distance out to render ground clutter. 0 disables it completely. Ground Vehicles beyond your clutter range setting are not displayed.

Stick Force Screen

For those with a force feedback joystick these settings can be customized to your personal preferences.

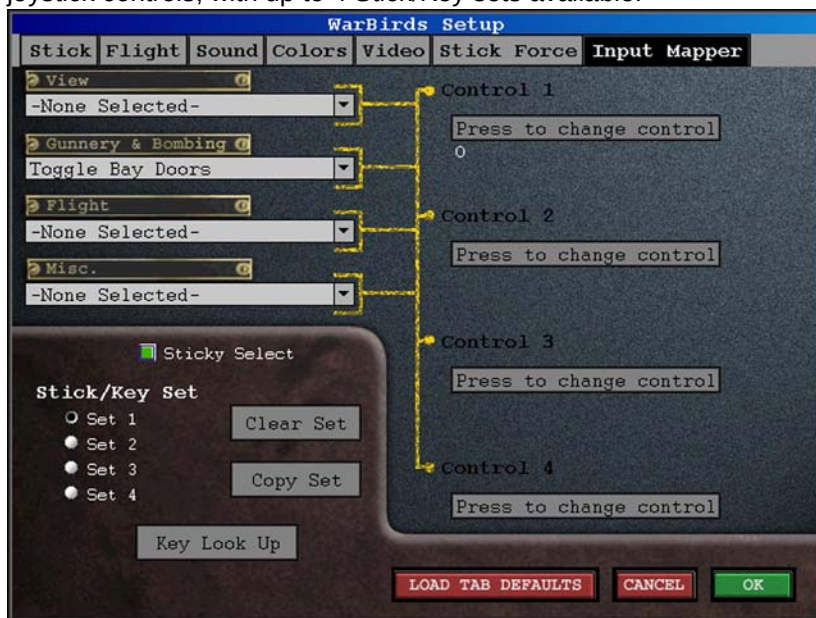


Stick Force Screen

Check the box to use the force feedback abilities of the joystick and change the sliders to reflect how much feedback you want for a particular effect.

Input Mapper Screen

The Input Mapper screen is where you customize the keyboard and joystick controls, with up to 4 Stick/Key sets available.



Input Mapper Screen

Drop-down Menus

There are four drop-down menus from which an action can be selected.

View	Gunnery & Bombing	Flight	Misc.
Look Up	Fire Guns	Wheel Brakes	Use Stick Set 1
Look Back	Fire Secondary Weapon	Dive Brakes	Use Stick Set 2
Look Left	Next Secondary Weapon	Toggle Landing Gear	Use Stick Set 3
Look Right	Toggle Pickle Mode	Left Rudder	Use Stick Set 4
Look Forward	Jump to Bombar-dier	Right Rudder	Microphone Switch

View	Gunnery & Bombing	Flight	Misc.
Look Left/Forward	Toggle Bay Doors	Center Rudder	Toggle Map
Look Right/Forward	AutoGunnery On/Off	Cockpit Window Lean	Increase Map Scale
Look Left Back	Gunner Move to Observer	AutoTrim Level	Decrease Map Scale
Look Right/Back	Jump to Pilot Station	Auto Trim Speed	Screenshot
Look Back/Up	Jump to Top Gun Station	Auto Trim Angle	Toggle Stick Set 1
Look Left/Up	Jump to Right Gun Station	Throttle Up 5%	Toggle Stick Set 2
Look Right/Up	Jump to Top Gun Station	Throttle Down 5%	Toggle Stick Set 3
Look Forward/Up	Jump to Bottom Gun Station	Throttle 100%	Toggle Stick Set 4
Look Left/Forward/Up	Jump to Tail Gun Station	Zero Throttle	Center Joystick
Look Right/Forward/Up	Jump to Nose Gun Station	War Emergency Power	Toggle Dive
Look Left/Back/Up	Jump to Left Gun Station	Toggle Engine	FPS Counter
Look Right/Back/Up	Jump to Chase Station	Select Engine 1	Offline Airshow Smoke
External Toggle	Toggle Auto Funners on Safe	Select Engine 2	Toggle Mouse Control
External View Zoom In	Display Attach Dialog	Select Engine 3	Key Help
External View Zoom Out		Select Engine 4	Track View
Norden View Zoom In		Select All Engines	Fixed View
Norden View Zoom Out		Raise Flaps 1 Notch	Radio Lines Toggle
Zoom In		Lower Flaps 1 Notch	Open Radio 1 Text Buffer

View	Gunnery & Bombing	Flight	Misc.
Zoom Out		Flaps All Up	Open Radio 2 Text Buffer
Default FOV		Flaps All Down	Open Radio 3 Text Buffer
Toggle Virtual Cockpit View		Eject	Open Radio 4 Text Buffer
Virtual Rotate Left		Eject with 3 Key Strokes	Toggle Message Window
Virtual Rotate Right		Trim Elevator Up	Toggle Icons
Virtual Rotate Up		Trim Elevator Down	Toggle Text Background
Virtual Rotate Down		Trim Rudder Right	Quit
Virtual Snap to Instruments		Trim Rudder Left	Toggle Cockpit
Virtual Snap to GunSight		Clear Trims	Toggle Slew Mode
		Next Fuel Tank	Toggle Disable HUD
		Gear Shift Up	Toggle in Plane View
		Gear Shift Down	Toggle Detail
		Toggle Engine 1	Jump to Next View
		Toggle Engine 2	
		Toggle Engine 3	
		Toggle Engine 4	

Sticky Select: When this is selected, and you have multiple stick sets, swapping from one to the other “sticks” with that set. When Stick Select is not activated, you need to hold down the key to briefly change to another set, and when the key is release you return to the original set.

Stick Key Set: Select the key set you want to set up or change. When flying, to change stick sets, select **F1**, **F2**, **F3**, or **F4** to change the set. Clear or Copy a set by clicking the appropriate button.

Key Look Up: Click Key look Up, and then press a key to button on the joystick to see what that key has been assigned to for the selected stick set.

Controls: When you select an action from the drop-down menus, you can set up to 4 keys or buttons that will perform that action. You may wish to have one key perform more than one action, such as setting the joystick trigger to fire both your primary and secondary weapons at the same time.

Trouble Shooting

Cleaning up your System

Regular scanning and defragmenting of your hard drive makes sure that your hard drive is in proper working order. Both these functions may take a number of hours, so make sure you have plenty of time available.

Scanning your Hard Drive

1. Turn off all programs that are running apart from Explorer and Systray (see [“Other Programs Running in the Background” on page 135](#))
2. Select *Start*, then *Programs*, then *Accessories*, then *System Tools* and then *ScanDisk*.
3. Select the drive to be scanned, click *Thorough*, and check the box next to *Automatically fix errors*.
4. Click *Start*.

Defragmenting your Hard Drive

1. Turn off all programs that are running apart from Explorer and Systray (see [“Other Programs Running in the Background” on page 135](#))
2. Select *Start*, then *Programs*, then *Accessories*, then *System Tools* and then *Disk Defragmenter*.
3. Select the drive to be scanned, and then click *OK*.

Modem Setup

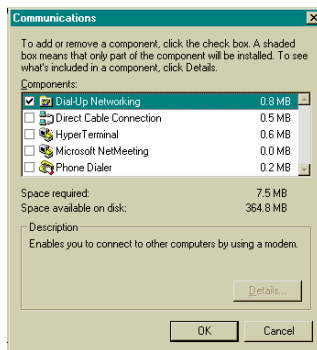
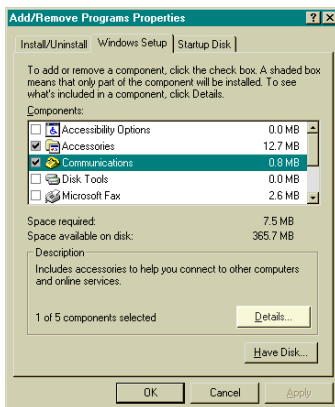
To play multiplayer games via modem, your modem needs to be installed properly, and then configured to certain optional settings for optimum performance. If necessary, connect and configure your modem following the manufacturer's instructions or the Windows documentation.

Setting up a Windows Dial-Up Connection

The following steps ensure that you are set up correctly, but check with your Internet Service Provider first, as these are generic settings and may not work with your ISP.

1. Verify that Dial-up Networking is installed.

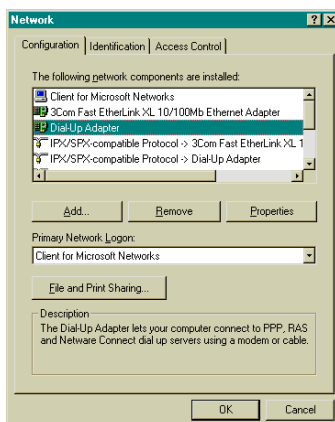
- a. Select the Windows *Start* menu, then select *Settings*, and then *Control Panel*, to open the Control Panel dialog box.
- b. Double-click on *Add/remove Programs*. Select the *Windows Setup* tab, then highlight *Communications* and press *Details...* The Communications dialog box is displayed.



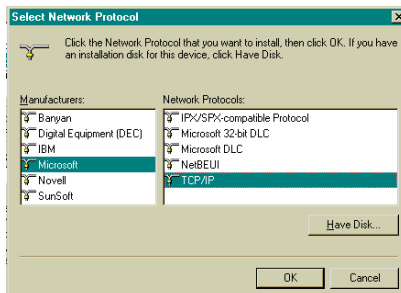
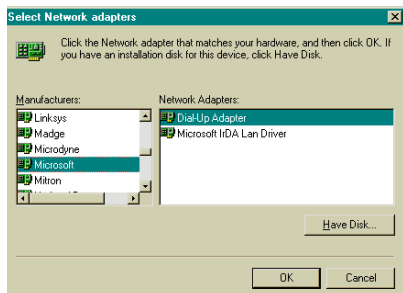
- c. Make sure that the *Dial-Up Networking* option has a check in the box to the left of it. If it has, go on to step 2.
- d. If it has not, check the box to the left of *Dial-Up Networking* and click *OK*.

- e. Select *Have Disc*. You need the modem setup disc or discs for this step—select the appropriate drive, and then follow the onscreen instructions.
 - f. From the Add/Remove Programs dialog box, click *OK*. This takes you back to the Control Panel dialog box.
2. Verify that the Dial-Up Adapter and TCP/IP are installed.

- a. Go to the Control Panel dialog box and double-click *Network*. The Network dialog box is displayed.



- b. Both *Dial-Up Adapter* and *TCP/IP* should be present under the Configuration tab. If they both are, then proceed to step 3.
- c. **If Dial-Up Adapter is not present:** Select *Add...* and then double-click *Adapter*. The Select Network Adapters dialog box is displayed. Scroll down the Manufacturers list and select *Microsoft*. From the Network Adapters list, select *Dial-up Adapter* and click *OK*. Follow the onscreen instructions.



- d. **If TCP/IP is not present:** Select *Add...* and double-click *Protocol*. The Select Network Protocol dialog box is displayed. Select *Microsoft* from the Manufacturers list. From the Network Protocols list select *TCP/IP*, and then click *OK*. Follow the onscreen instructions.
- e. Now your Network dialog box should list both *Dial-Up Adapter* and *TCP/IP*.

- f. Select *Dial-Up Adapter* and click *Properties...* Select *Bindings*, and make sure *TCP/IP* is checked. You are now ready to proceed to step 3.
 - g. When the System Settings Change dialog box appears, select *Yes* to restart the computer and allow the changes to occur.
3. Create the connection.
- a. Double-click on the *My Computer* on the Windows desktop and then double-click *Dial-Up Networking*.
 - b. Double-click *Make New Connection*.
 - c. Type your Internet Service Provider's name in the *name for the computer you are dialing* field. Click *Configure*.
 - d. Under the General section, set the speed to the 19200 baud rate. Do *not* check *Only Connect at This Speed*. Your modem should have been automatically configured by Windows.
 - e. Under the Connection section, set the preferences to:
 - DataBits:** 8
 - Parity:** none
 - Stop bits:** 1
 - f. Under the Options section, uncheck *Display Modem Status*.
 - g. Click *OK* and then click *Next>*. Enter the phone number that you use to dial in to your ISP. If you have call waiting add ***70**, (including the comma) to the beginning. This temporarily disables call waiting.
 - h. Click *Next>*, and then *Finish*. The new *Dial-Up* icon is created.
 - i. Right-click on this *Dial-Up* icon, and then select *Properties*. Click *Server Type*, and then set *Type of Dial-Up Server* to *PPP: Internet, Windows NT Server, Windows 98*.
 - j. Under the Advanced Options section, only *Log on to Network* should be checked.
 - k. Under the Allowed Protocols section, only *TCP/IP* should be checked.
 - l. Contact your Internet Service Provider for the proper TCP/IP settings and DNS numbers.
 - m. Click *OK* to return to the Windows desktop, and you are now ready to connect.

NOTE: You should always contact your Internet Service Provider for settings specific to their service.

Optimize your Connection

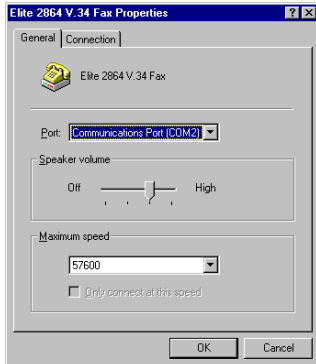
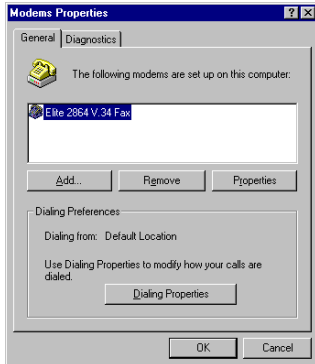
To get the best PPP connection to iEN, you need to change some of the default settings that Windows Dial-Up Networking selects. Windows sets up the Dial-Up connection's properties to optimize high speed file transfers and web browsing—applications which stress bandwidth and data transfer rate.

WarBirds communications does not require a huge bandwidth, but relies more upon quickness of response and lower data rates.

We recommend making a separate Dial-Up connection for *WarBirds* use, rather than adjusting the properties of your existing connection every time you want to play. See [“Setting up a Windows Dial-Up Connection” on page 130](#).

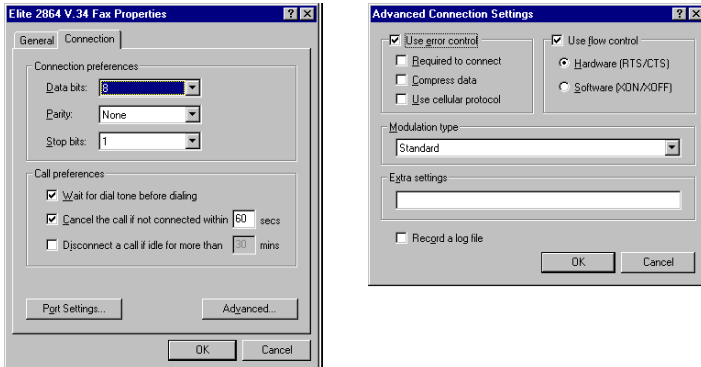
Optimize the New Connection

1. Open the Control Panel by clicking the Windows *Start* menu, then select *Settings*, and then *Control Panel*.
2. Double-click *Modems* to display the Modem Properties window.



3. Select the modem whose settings you want to change.
4. Select *Properties*, the Properties window for the selected modem is displayed. Lower the maximum speed to 38400 or 19200—try it both ways as results can vary.
5. Next, select *Connection*, and then *Port Settings...* Make sure that *Use FIFO Buffers* is checked, then move both sliders one or two notches to the left from their default positions. Again, results may

vary. iEN currently recommends setting both sliders to the one notch to the right from the left. Click *OK*.



6. Select *Advanced*.
7. Make sure that *Use flow control* is checked, and that *Hardware (RTS-CTS)* is selected.
8. Make sure that *Use error control* is *unchecked*. If the phone line quality is poor, your modem may not be able to establish a stable connection. If this happens, reinstate the *Use error control* check mark, but be sure to disable (remove the check mark for) *Compress Data*.
9. Select *OK* to return to the Properties window and apply the new settings, and then select *OK*.
10. Next, select *Server Types*. All three of the *Advanced Options* should be *unchecked*. TCP/IP should be the only *Allowed Protocol* checked. Select *TCP/IP settings*, and check that your DNS numbers are correct. (Check the existing settings or contact your Internet Service Provider.)
11. Make sure that *IP header compression* and *Default Gateway* are both checked. Click *OK* and then *OK* again. Your connection should be ready to go!

NOTE: If you still experience problems with these recommended settings, please contact WarBirds Tech Support at wbtech@ient.com.

Known Problems

Poor Frames per Second (fps)

Some system configurations might produce only 15 fps that should be exceeding 60 fps. Reduced frame rates can occur for many different reasons here are the most common:

1. If you have a VIA chipset on the motherboard, **INSTALL THE DRIVERS FOR THE MOTHERBOARD**. Look for newer AGP drivers (sometimes part of the 4 in 1 driver set). Without the additional drivers installed you will never get full performance.
2. Interrupt conflicts can cause a major performance drop. Make sure none of the interrupts overlap. DMA conflicts are also possible. Use Device Manager in Control panel/System to verify there are no conflicts.
3. Make sure AGP is enabled. GeForce cards will drop to 1/4 performance if AGP isn't working. Check the DirectX diagnostics (Start/Run dxdiag) to see if AGP is enabled.

We're running debug builds on a P2-400 with a G400 at 30 fps. GeForce cards and release builds do even better. Also, if you have a Radeon or a GeForce, you should be selecting the T&L HAL otherwise all transforms will be done on the CPU. These cards are designed to get better performance when the T&L pipeline is used (less traffic on the AGP bus).

Updated drivers for video cards can be obtained from each manufacturer's website.

- [NVidia](#)
- [Matrox](#)
- [ATI](#)

Other Programs Running in the Background

Other programs running in the background can also cause performance or interface problems.

Turn off animated cursors, transition effects in display properties (Win2k and XP), and any other large programs currently running, any special anti-virus or system maintenance utilities (such as system restore and system maintenance under Windows ME), any crash protection software, any ICQ or EMail programs or web browsers running in the background prior to starting the game.

You can use the [End It All](#) program to turn most off. This program is freely available on the internet.

If using Microsoft Plus! software, choose the Windows Standard Desktop Theme prior to starting the game (you can switch back to your preferred theme after exiting the game). If using Microsoft Intellipoint software, turn off the Pointer Wrap feature for your mouse prior to starting the game.

Macintosh users should make sure virtual memory is turned ON and that at least the recommended amount of memory is allocated to the game. Turn off any extraneous extensions and verify you have the latest draw sprockets and video card drivers.

Stuttering

There are two ways that stutters might occur:

1. A resource is requested that either hasn't been loaded yet or has been moved to the swap file. In this case there will be a slight pause while it loads.
2. You are getting a frame rate JUST on the threshold of a factor of the refresh rate so the frame update is "togglng" between two different rates.

Number two above needs some additional explanation. Double buffering means there are only 2 screen surfaces to render into and display on the monitor. For aesthetic reasons, you do not want to render into the surface being scanned out by the card to the monitor so you wait for the screen update to complete after swapping buffers before you erase the contents and draw on it.

This means the "real" frame rate is tied to the refresh rate of the monitor. But it gets worse; if you take JUST longer than the refresh rate to create a new surface, you MISS an update and have to wait for the next one. This causes the apparent frame rate to drop in half. This would be fine, but we're far more sensitive to changes in rate of motion than detecting constant motion so this looks very "wrong" and is noticeable. This is why even a constant 20 fps "feels" better than constantly oscillating between 30 and 60.

For example: 60 Hz refresh rate. This means the ONLY possible frame update rates are: $60/1=60$, $60/2=30$, $60/3=20$, $60/4=15$, $60/5=12$, $60/6=10$, $60/7=8.5$ Let's say you're getting 60 fps and occasionally it takes a little longer to render a frame and you drop to 59.4 fps. This means the apparent rate toggling between 60 and 30. This looks bad. The solution is to detect it and increase the amount of work done to make sure you always meet at least 30 but never let it achieve ≥ 60 fps.

The other way around this is to use triple buffering. This relaxes the restriction a little since there are now 3 buffers so as long as you don't get too far behind you can go ahead and start rendering since you now have one surface for the screen update, one with the scene about to be displayed, and a spare surface to start rendering into now without disturbing the screen update. The down side with triple buffering is it uses more VRAM so there is less available for textures which can be a more severe performance drop than continuing with double-buffering instead. Another alternative is to try a different refresh rate, but remember, higher refresh rates mean less bandwidth is available during rendering so it may be SLOWER.

Flickering Water and Coastline

It is a Z-Buffer artifact. At a distance from the camera you lose precision in the depth determination so polygons "fight" over the same pixel, very slight changes in the camera position and orientation cause the choice to switch from frame to frame. We're still looking for a good way to eliminate it, but for now stay away from 16-bit Z-Buffers to minimize it.

NOTE: NVidia hardware ALWAYS uses a 16-bit Z-Buffer if the video mode is not also 32-bit. Running in a window with the desktop less than 32-bit will also select a 16-bit zbuffer. The GeForce 2 MX and GeForce 3 supposedly have this fixed. The 32-bit frame buffer has nicer graphics and the frame rate hit is barely noticeable.

Overriding Processor Detection to Eliminate Exception Crashes

WarBirds III automatically detects the processor and uses specialized code paths for each processor. If you encounter crashes due to exceptions (usually in a function like `V3D_Matrix_Mult_Pentium3`, for example), it may be due to an incorrect identification of either the processor or operating system support. Here is a way to override the processor detection and force the use of a different code path.

The Default is "Intel Pentium" (a generic code path while we work on fixing an issue with some AMD and P3 processors). Change this to your system AT YOUR OWN RISK.

Users with a Pentium4 processor need to set the `cpu.cfg` file to 0 to avoid crashes in certain situations.

1. Open the WarBirds III directory using Windows Explorer.
2. Right-click in the folder, select **New**, then **Text Document** and name it **cpu.cfg**.

3. Double-click on the file to open it, and then type one of the following numbers:

- 0 = Auto-detect (default if cpu.cfg doesn't exist)
- 1 = Intel Pentium
- 2 = Intel Pentium 2
- 3 = Intel Pentium 3
- 4 = AMD K6
- 5 = AMD K6-2
- 6 = AMD Athlon and Duron

NOTE: You can use 1 (Intel Pentium) for any Intel compatible processor (Cyrix, AMD, etc) since it is a generic code path.

4. Press the X in the top right hand corner of the text document to close it and click on Yes when asked whether or not to save the file.

Confirm the change occurred by typing **.cpu** into the radio buffer. It reports which processor/codepath is currently in use.

If you experience problems, please file a bug report on the [UBB](#) with information on your machine type, processor type, and whether or not overriding the CPU detection to an earlier processor revision corrected it.

Loss of Frame Rate while Flying over Towns

Some 32 meg 3D cards might take up to a thirty percent frame per second hit when flying low and at a angle on the towns. This generally does not happen with 64 meg 3D cards.

Textures show up as White on a Macintosh

On a Macintosh some textures show up as white. Whenever OpenGL doesn't have enough memory to load a texture, it comes out as white. Try increasing your virtual memory, and see if the white areas are still there. Then, if they aren't, you can lower the VRAM for performance reasons.

It appears OpenGL is running out of memory to hold its texture cache in system memory. Memory is shared between OpenGL and the application so giving more to the application takes it away from OpenGL. OpenGL renders in white if the texture isn't loaded.

It seems each Macintosh graphics artifact can be traced back to a texture load fail due to memory so only one thing has to be fixed to correct them all, fortunately. We're working on reducing the memory requirements.

Macintosh Radeon and Geforce 2 Cards

There are some known graphics anomalies on the Radeon and GeForce 3D cards on the Macintosh at this time. We are working with Apple, NVidia and ATI to resolve these issues.

In addition, certain combinations of NVidia cards, drivers, and OpenGL versions require users of such cards to need to allocate more memory to the WarBirds III application. If you use an NVidia card and are getting crashes or a black screen upon pressing the FLY button in the Main menu, allocate an extra 60-80 megs to the WarBirds III application to fix this.

To allocate the additional memory, find the WarBirds III application on your hard drive. It will normally be in your \iEntertainment Network\WarBirds III folder. Click it once to highlight it and press **CMD + I**. This will bring up the info box for the application. From here you can select to allocate more memory via the drop-down box in the center of the menu.

Cursor Keys don't change Views

Please check your **Accessibility Options** settings in the Control Panel. Under the Mouse tab there is a checkbox for MouseKeys. If this is checked on, all cursor actions are intercepted and used to control the mouse cursor. Please make sure this is OFF.

Loss of USB Joystick Functionality

Game controllers each need their own bus to function properly. If you are connecting multiple USB devices off of a USB hub, you may have one or more of these devices cease functioning during the game. The only known solution to this is to purchase and install a two or four port expansion PCI card.

The W-Buffer

To better support the Kyro II chip and other 3D accelerators which only provide a 16 bit Z-Buffer, there is now an option to select a W-Buffer representation of depth with a new dot command. This trades off accuracy in depth testing near the camera by spreading the depth information out over the entire view distance; errors in sorting land versus water at a distance will be improved, but there may be additional anomalies.

To enable this mode, type **.wbuffer 1** in the radio buffer. A message is written to the radio buffer indicating whether or not the mode is sup-

ported by your hardware. Typing **.wbuffer 0** disables the W-Buffer. Please note that this is not a persistent setting and it needs to be set again if you restart the program.

NOTE: The vehicle display in the main menu may be blank when the W-Buffer is enabled! This is a known issue.

Customer Service

Online

FAQ

Read the FAQ (frequently asked questions) at <http://www.warbird-siii.com/faq.html>. The chances are that you will find the answer to any queries here.

Web Site

Visit the WarBirds III Web site at <http://www.warbirdsiii.com/>

The site contains additional information, add ons and enhancements, the weekly Situation Report, regular News stories and Latest Version updates to download.

Bulletin Boards

To ask questions online, or just to make comments, post on the Bulletin Boards at <http://bbs.warbirdsiii.com/>. There are several different forums available:

- *News and Announcements*—All the news that is news and some that isn't.
- *Support*—Having a problem getting WarBirds or Dawn of Aces to run?
- *Dawn of Aces*—Where the aces from the Great War come to meet.
- *WarBirds 2.77r3*—Come fly with me...and bomb the enemy.
- *WarBirds III*—WarBirds with a 'tude.
- *Events*—Created by players for players, the Events are one of the most exciting places to fly in *WarBirds III*.
- *Miscellaneous*—Miscellaneous forums that don't fit elsewhere.

Tech Support

Before contacting the Technical Support team, read the WarBirds FAQ (frequently asked questions) at <http://www.warbirdsiii.com/faq.html> . The chances are that your question has been asked before, and the answer placed here.

Technical Support is available by phone at:

(919) 678-8834 Friday and Saturday 12noon - 8pm EST

Or, send E-mail at anytime to: wbtech@ient.com.

Billing & Account Information

Go to our secure online Account Maintenance pages at <https://secure.ientcentral.com/icons2/account/login.html> where you can:

- Check your balance
- Change your password
- Change the credit card billed
- Change your payment plan

Or, send email to wbaccounts@ient.com with *WarBirds Account* in the subject line.

To cancel your account, email wbaccounts@ient.com with *Cancel WarBirds Account* in the subject line.

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Graphics Engine By

Winter Wolf Software, LLC

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